

WBS No: 1HAG10  
Activity ID: 1HAG1000A7

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

WBS No:	1HAG10	Title:	Engineering Programs									
Activity ID:	1HAG1000A7	Description:	End of Design Document Control									
				Cost Risk		1	Schedule Risk		1			
Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LG2001A7	Design Document Control	1.00	each	EE	0	0	0	425.750	0	425.750	0	425.750
LG2002A7	Equipment Maintenance/Leases	1.00	each	EE	0	0	0	67.124	0	67.124	0	67.124
LG2003A7	CAD Operations Close-Out	1.00	each	EE	0	0	0	5.300	0	5.300	0	5.300
SYS	Contingency And Escalation	1.00	ea	EE	0	0	0	0	256.356	256.356	0	256.356
Total for Activity 1HAG1000A7:						0	0	498.174	256.356	754.530	0	754.530

**Line Item LG2001A7 - Design Document Control**

BOE	Estimators Experience - This estimate is based upon similar work conducted in FY99 under charge number NJ680200.  Experience Item Desc - Investigation/Disposition of Abandoned documents includes identifying the document; searching the database to check currency/revision level; contacting company engineering representative to determine status; creating central project file; sending to archival storage; updating EDOC database if applicable; sending for microfilming if applicable; scanning if applicable; sending for updating of Master drawing if applicable; and/or shredding [UCNI] or recycling as appropriate. This line item also includes aperture card conversion which entails collecting drawing number series to be scanned, logging for shipment offsite, verifying the return of all cards, and performing a random quality check of digital images upon return.  Breakdown of Cost Data: Item - Document Control Microfilming Classified Documents Units - Source One Subcontracted Support Unit Cost - \$3.75 per document x approximately 500 documents  Item - SDDC support Units - 2 FTEs of support to maintain, manage, support site request, etc. in the SDDC Unit costs - \$50 average dollars per hour  Item - Records Management/Work Control Document Support Units - 400 boxes of records to archive to the Federal Center Unit Costs - Source One estimate of May 2, 2000 is a cost of \$65 per box.
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Resources				Cost Element		Skill		Department		Curve	Quantity	Units
A55	SOURCE ONE	0000	NONE	K252S	Engineering	Linear	3,750.00	Dollars				
Factors	500	drawings per year	3.75	\$/drawing	2	years						
A55	SOURCE ONE	0000	NONE	K252S	Engineering	Linear	52,000.00	Dollars				
Factors	400	boxes to be archived at Fed Center	65	dollars per box for Source One to	2	years						
A58	ASI	P170	OTHER ADMINISTRATIVE & PROFE	K252S	Engineering	Linear	370,000.00	Dollars				
Factors	3700	hours for 2 Commodore FTEs	50	dollars per hour	2	years						

**Line Item LG2002A7 - Equipment Maintenance/Leases**

BOE	Estimator Experience - This estimate is based upon FY99 experience and best guess of equipment maintenance needs. Also included is the 5 year contract for Leased equipment (this contract will end in 2005).  Item Desc - Support contracts with Xerox for the maintenance of the following machines: Xerox 7085, 2510, and 2515; OCE for maintenance of the TC300 and the 3000NT Aperture Card Scanner; Docutek for microfilm reader; Fujistu for maintenance on a Fujistu Scanner; Hewlett Packard for HP 755CM Plotter (color plotter) in support of the SDDC equipment. This line item also covers contracts with Imation Corp, Parametric Technologies, and Service Resource Agency for site DOCUMENT CONTROL and CAD equipment.  Breakdown of Cost Data: Item - Subcontracted Maintenance Unit Cost - \$3,263 per month  Item - Equipment Rentals Units - 16 months Unit Cost - \$1225 per month  This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.
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Resources				Cost Element		Skill		Department		Curve	Quantity	Units
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A5H	SUBCONTRACTED SRVS	0000	NONE	K252S	Engineering	Trianglr Decr	47.523.69	Dollars
Factors	3263 \$/month	18	months					

A5L	RENTALS	0000	NONE	K252S	Engineering	Trianglr Decr	19.600.00	Dollars
Factors	1225 \$/month	16	months					

**Line Item LG2003A7 - CAD Operations Close-Out**

BOE

Estimator Experience - This estimate is based upon best guess.								
Item Desc - This line item funds the acquisition of supplies for final Design Basis Records close-out and storage.								
Breakdown of Cost Data:								
Item - Data Storage disks, etc.								
Units - 530 disks for storage of 100 units of data								
Unit Cost - estimated at @ \$100 each								

Resources

Cost Element		Skill		Department		Curve	Quantity	Units
A5C	SUPPLIES	0000	NONE	K252S	Engineering	Trianglr Decr	5.300.00	Dollars
Factors	5300	Increase to archive Storage Compacy						

**Line Item SYS - Contingency And Escalation**

BOE

Resources

Cost Element		Skill		Department		Curve	Quantity	Units
CON	CONTINGENCY	0000	NONE	ZDEPT	No Department	Linear	173.664.60	Dollars
Factors	173665	Dollars						
ESC	ESCALATION	0000	NONE	ZDEPT	No Department	Linear	82.691.79	Dollars
Factors	82691.8	Dollars						

Activity ID: 1HAG100100

Description: Site Design Authority FY01 & 02

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF100101	Site Design Authority	1.00	each	EE	7.400	7.400	264.476	392.405	0	656.881	109.722	766.602
SYS	Contingency And Escalation	1.00	ea	EE	0	0	0	0	72.723	72.723	0	72.723
Total for Activity 1HAG100100:						7.400	264.476	392.405	72.723	729.604	109.722	839.325

**Line Item LF100101 - Site Design Authority**

BOE

Estimators Experience - This estimate is based upon similar work conducted in FY99.								
Experience Item Desc - This line item funds a full time Site Chief Engineer, secretary, budget analyst and the services of an off-site technical expert, when required.								
Breakdown of Cost Data:								
Item - Engineering Program Administration								
Units - 2 FTEs								
Unit Cost - 1850 hours								
Item - Technical Expert								
Units - 400 hours + travel								
Unit Cost - 125 per hour hours plus travel expenses								
Item - Travel for Technical Expert								
Units - 8 trips								
Unit Cost - approximately \$1,250 per trip (estimate taken from actual travel cost of \$1,267.75 for one week trip of Beckman & Associates in FY00)								
Item - Budget/Finance Analyst								
Units - 1850 hours								
Unit Cost - \$82 per hour (Tenera FY00 rates)								
This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.								

Resources

Cost Element		Skill		Department		Curve	Quantity	Units
750	STRAIGHT TIME BASE	G040	SECRETARIES	K252S	Engineering	Linear	3.700.00	Hours
Factors	1850	hours	2	years				

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750	STRAIGHT TIME BASE	M020	MANAGERS (GRADE 69 - 72)	K252S	Engineering	Linear	3,700.00	Hours
Factors	1850 hours		2 years					
A52	TENERA	P070	COST ESTIMATORS PLANNERS AN	K252S	Engineering	Linear	303,400.00	Dollars
Factors	1850 hours		82 per hour (Tenera)		2 years			
A5H	SUBCONTRACTED SRVS	0000	NONE	K252S	Engineering	Linear	8,091.34	Dollars
Factors	1250 travel expenses for Technical Expert		8 trips over 2 years					
						0.80913 [SYS 061400] .80704 - System		
A5H	SUBCONTRACTED SRVS	E120	SAFETY ENGINEERS	K252S	Engineering	Front Loaded	80,913.42	Dollars
Factors	400 hours		125 per hour (Beckman)		2 years			
						0.80913 [SYS 061400] .80704 - System		

**Line Item SYS - Contingency And Escalation**

**BOE**

**Resources**

Cost Element	Skill	Department	Curve	Quantity	Units
CON CONTINGENCY	0000 NONE	ZDEPT No Department	Linear	47,250.96	Dollars
Factors	47251 Dollars				
ESC ESCALATION	0000 NONE	ZDEPT No Department	Linear	25,471.82	Dollars
Factors	25471.8 Dollars				

Activity ID: 1HAG100101 Description: Site Design Authority FY03 & 04

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF100101	Site Design Authority	1.00	each	EE	7,400	7,400	264,476	108,398	0	372,874	83,027	455,901
SYS	Contingency And Escalation	1.00	ea	EE	0	0	0	0	95,905	95,905	0	95,905
Total for Activity 1HAG100101:						7,400	264,476	108,398	95,905	468,779	83,027	551,806

**Line Item LF100101 - Site Design Authority**

**BOE**

Estimators Experience - This estimate is based upon similar work conducted in FY99.  
Experience Item Desc - This line item funds a full time Site Chief Engineer and secretary and the services of an off-site technical expert, when required.  
It also fund the Engineering division's supplies and travel.  
Breakdown of Cost Data:  
Item - Engineering Program Administration  
Units - 2 FTEs  
Unit Cost - 1850 hours  
  
Item - Safety Engineer  
Units - 350 hours + travel  
Unit Cost - 125 per hour hours plus travel expenses  
  
Item - Travel for Technical Expert  
Units - 6 trips  
Unit Cost - approximately \$1,250 per trip (estimate taken from actual travel cost of \$1,267.75 for one week trip of Beckman & Associates in FY00)  
  
Item - Engineering Supplies  
Units - 14 FTEs of supplies + additional expenses  
Unit Cost - 14 FTEs x 2 years x \$250 per person = \$7,000  
\$7000 in FY03 and \$6030 in FY04 for additional expenses (see below)  
  
Itemized Additions: \$7k FY03 + \$6k FY04 = \$13,030  
3 Memory Upgrades x \$130 = \$390  
1 Computer Replacement x \$2,884 computer & \$395 monitor = \$3,279  
4 Software Purchases x \$398 = \$1,592  
140 Reams of Paper for the Fax Machine/Color Printer x \$10 = \$1,400  
1 Lot of Paper for 2 network printers = \$5,616  
2 Toner/Developer for Fax Machine x \$100 = \$200  
Recycle Boxes (1 lot of 50 boxes) = \$30  
Toner/Developer for 5si Printer = \$178  
3 Color Printer Toner x \$115 (\$70 for Black; \$45 for Color) = \$345  
  
Item - Engineering Organization's Travel  
Units - 3 trips on FY03 and 2 trips in FY04

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Unit Costs - Approximately \$2,300 per trip

Itemized Travel Cost Estimate: Duration is 4 working days  
Airfare - 7 day advance notice \$600;  
Car Rental - \$38/day x 5 = \$190;  
PerDiem for DC - \$46/day meals x 5 = \$230  
Hotel for DC - \$118/night x 4 nights = \$472  
DIA Airport Parking - 5 days X \$10 = \$50  
Average Registration Fee - \$750  
TOTAL Cost: 2,292

This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.

**Resources**

Cost Element		Skill		Department		Curve	Quantity	Units
750	STRAIGHT TIME BASE	G040	SECRETARIES	K252S	Engineering	Linear	3.700.00	Hours
Factors	1850 hours	2	years					
750	STRAIGHT TIME BASE	M020	MANAGERS (GRADE 69 - 72)	K252S	Engineering	Linear	3.700.00	Hours
Factors	1850 hours	2	years					
A5C	SUPPLIES	0000	NONE	K252S	Engineering	Front Loaded	20.030.00	Dollars
Factors	20030 organization's supplies							
A5H	SUBCONTRACTED SRVS	0000	NONE	K252S	Engineering	Linear	6.068.51	Dollars
Factors	1250 travel expenses for Technical Expert	6	trips over 2 years					
						0.80913 - [SYS 061400] .80704 - System		
A5H	SUBCONTRACTED SRVS	E120	SAFETY ENGINEERS	K252S	Engineering	Linear	70.799.25	Dollars
Factors	350 hours	125	per hour (Beckman)	2	years			
						0.80913 - [SYS 061400] .80704 - System		
A5M	TRAVEL/TRAIN/RELOCAT	0000	NONE	K252S	Engineering	Front Loaded	11.500.00	Dollars
Factors	2300 travel expenses per trip	5	trips					

**Line Item SYS - Contingency And Escalation**

**BOE**

**Resources**

Cost Element		Skill		Department		Curve	Quantity	Units
CON	CONTINGENCY	0000	NONE	ZDEPT	No Department	Linear	56.701.18	Dollars
Factors	56701.2 Dollars							
ESC	ESCALATION	0000	NONE	ZDEPT	No Department	Linear	39.203.99	Dollars
Factors	39204 Dollars							

Activity ID: 1HAG100103 Description: Site Design Authority FY05

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF100103	Site Design Authority	1.00	each	EE	0	0	0	4.250	0	4.250	0	4.250
SYS	Contingency And Escalation	1.00	lea	EE	0	0	0	0	2.268	2.268	0	2.268
Total for Activity 1HAG100103:						0	0	4.250	2.268	6.518	0	6.518

**Line Item LF100103 - Site Design Authority**

**BOE**

Estimators Experience - This estimate is based upon similar work conducted in FY99.  
Experience Item Desc - This line item funds a full time Site Chief Engineer and the services of an off-site technical expert, when required. It also fund the Engineering division's supplies and travel.  
Breakdown of Cost Data:  
Item - Travel for Technical Expert  
Units - 3 trips  
Unit Cost - approximately \$1,250 per trip (estimate taken from actual travel cost of \$1,267.75 for one week trip of Beckman & Associates in FY00)  
  
Item - Engineering Supplies  
Units - 3 FTEs of office supplies + additional requirements  
Units - 3 FTEs x \$250 per person = \$750 + \$3,500 in additional requirements  
  
Itemized Additional Requirements: \$3,500  
1 Memory Upgrades x \$130 = \$130  
2 Software Purchases x \$398 = \$796

WBS No: 1HAG10  
Activity ID: 1HAG100103

**Rockv Flats Closure Project**  
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Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

70 Reams of Paper for the Fax Machine/Color Printer x \$10 = \$700  
Paper for 2 network printers = \$1,336  
1 Toner/Developer for Fax Machine x \$100 = \$100  
Recycle Boxes (1 lot of 50 boxes) = \$30  
Toner/Developer for 5si Printer = \$178  
2 Color Printer Toner x \$115 (\$70 for Black; \$45 for Color) = \$230

Resources		Cost Element	Skill		Department		Curve	Quantity	Units
A5C	SUPPLIES		0000	NONE	K252S	Engineering	Linear	4.250.00	Dollars

Factors 4250 organization's supplies

**Line Item SYS - Contingency And Escalation**

**BOE**

Resources		Cost Element	Skill		Department		Curve	Quantity	Units
CON	CONTINGENCY		0000	NONE	ZDEPT	No Department	Linear	1.609.36	Dollars

Factors 1609.36 Dollars

ESC	ESCALATION		0000	NONE	ZDEPT	No Department	Linear	658.39	Dollars
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Factors 658.39 Dollars

Activity ID: 1HAG1001P2 Description: Engineering Programs

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF100101	Site Design Authority	1.00	each	EE	1.458	1.458	52.109	108.919	0	161.028	25.429	186.457
LF100102	Engineer Programs Administration	1.00	each	EE	1.458	1.458	44.207	14.750	0	58.957	21.573	80.529
LF100103	Project Support/SMEs	1.00	each	EE	1.458	1.458	47.276	168.273	0	215.549	23.071	238.619
LF100104	Standards & Drawings	1.00	each	EE	50	50	1.639	1.350	0	2.989	800	3.788
LF100105	ASME Program	1.00	each	EE	30	30	983	0	0	983	480	1.463
LF100106	Annual Assessments	1.00	each	EE	0	0	0	54.320	0	54.320	0	54.320
LF100107	Pressure Safety Program Management	1.00	each	EE	729	729	23.889	21.525	0	45.414	11.658	57.072
LF100108	Pressure Safety PRV Valve Replacement	1.00	each	EE	2.099	2.099	72.839	18.182	0	91.021	44.703	135.724
LF100109	Pressure Safety UT Thickness Testing	1.00	each	EE	257	257	8.980	0	0	8.980	4.382	13.362
LF100110	Engineering Procedures Updates	1.00	each	EE	1.458	1.458	39.570	16.647	0	56.218	19.310	75.528
LF100112	CSI Specification Writing	1.00	each	EE	0	0	0	53.137	0	53.137	0	53.137
Total for Activity 1HAG1001P2:						8.997	291.492	457.103	0	748.594	151.405	900.000

**Line Item LF100101 - Site Design Authority**

**BOE**

Estimators Experience - This estimate is based upon similar work conducted in FY99.  
Experience Item Desc - This line item funds a full time Site Chief Engineer and secretary and the services of an off-site technical expert, when required.  
Breakdown of Cost Data:  
Item - Engineering Program Administration  
Units - 2 FTEs  
Unit Cost - 729 hours  
  
Item - Technical Expert  
Units - 350 hours + travel  
Unit Cost - 125 per hour hours plus travel expenses  
  
Item - Travel for Technical Expert  
Units - 3 trips  
Unit Cost - approximately \$1,797 per trip (estimate taken from actual travel cost for one week trip in FY00)  
  
Item - Budget/Finance Analyst  
Units - 729 hours  
Unit Cost - 82 per hour

Resources		Cost Element	Skill		Department		Curve	Quantity	Units
750	STRAIGHT TIME BASE		G040	SECRETARIES	K252S	Engineering	Linear	729.00	Hours

Factors 729 hours

750	STRAIGHT TIME BASE		M020	MANAGERS (GRADE 69 - 72)	K252S	Engineering	Linear	729.00	Hours
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Factors 729 hours

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Starts In FY \*

A52	TENERA	P070	COST ESTIMATORS PLANNERS AN	K252S	Engineering	Linear	59,778.00	Dollars
Factors	729	hours	82	per hour (Tenera)				
A5H	SUBCONTRACTED SRVS	0000	NONE	K252S	Engineering	Linear	5,391.00	Dollars
Factors	1797	travel expenses for Technical Expert	3	trips				
A5H	SUBCONTRACTED SRVS	E120	SAFETY ENGINEERS	K252S	Engineering	Linear	43,750.00	Dollars
Factors	350	hours	125	per hour (Beckman)				

**Line Item LF100102 - Engineer Programs Administration**

BOE	Estimators Experience - This estimate is based upon similar work conducted in FY99. Experience Item Desc - This line item funds a full time Engineering Programs Manager, secretary, supplies, and travel. Breakdown of Cost Data: Item - Engineering Programs Administration Units - 2 FTEs Unit Cost - 729 hours each  Item - Supplies Units - 34 employees supplies Unit Cost - 250 per person  Item - Approved FY00 Travel Units - 2 trips: 1 for DOE/NRC Nuclear Air Cleaning Conference (presenting paper on Demister Systems and D&D of HEPA filter plenums); and 1 for the CSI Convention Unit Cost - (\$2,700 travel * 2) + \$850 Fees = \$6,250
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Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	750	STRAIGHT TIME BASE	G040	SECRETARIES	K252S	Engineering	Linear	729.00	Hours
	Factors	729	hours						
	750	STRAIGHT TIME BASE	M030	MANAGEMENT INTEGRATORS (GR	K252S	Engineering	Linear	729.00	Hours
	Factors	729	hours						
	A5C	SUPPLIES	0000	NONE	K252S	Engineering	Linear	8,500.00	Dollars
	Factors	34	FTEs	250	per person				
	A5M	TRAVEL/TRAIN/RELOCAT	0000	NONE	K252S	Engineering	Linear	6,250.00	Dollars
	Factors	6250	approved Travel						

**Line Item LF100103 - Project Support/SMEs**

BOE	Estimators Experience - This estimate is based upon similar work conducted in FY99 and the expected need during the remainder of FY00. Experience Item Desc - This line item provides SME support for the preparation, review, and/or presentation of requested engineering information. SMEs must maintain up-to-date knowledge of the plant operations, and aid in the resolution of emergent issues such as thermal, structural, electrical, architectural, etc. issues. Breakdown of Cost Data: Item - SME for Structural Engineering, specifications, HEPA Support, Crit Alarms, SAAMS, CAM Support, Instruments & Controls, Civil/Mechanical/Electrical/Architictural issues, and ASME Maintenance Units - 4.5 FTEs
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Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	750	STRAIGHT TIME BASE	E040	ELECTRICAL ENGINEERS	K252S	Engineering	Linear	729.00	Hours
	Factors	729 electrical/alarms specialist							
	750	STRAIGHT TIME BASE	E070	MECHANICAL ENGINEERS	K252S	Engineering	Linear	729.00	Hours
	Factors	729 HEPA filter FTE							
	A52	TENERA	E020	CIVIL ENGINEERS	K252S	Engineering	Linear	59,778.00	Dollars
	Factors	729 civil engineer							
				82	dollars per hour (Tenera)				
	A52	TENERA	E120	SAFETY ENGINEERS	K252S	Engineering	Linear	59,778.00	Dollars
	Factors	729 structural engineer							
			82	dollars per hour (Tenera)					
A5H	SUBCONTRACTED SRVS	E070	MECHANICAL ENGINEERS	K252S	Engineering	Linear	44,160.00	Dollars	
Factors	480 mechanical/civil/HVAC Expert								
			92	dollars per hour					
A5H	SUBCONTRACTED SRVS	E130	OTHER ENGINEERS	K252S	Engineering	Linear	4,557.00	Dollars	
Factors	49 thermal engineer								
			93	dollars per hour (EneraX)					

**Line Item LF100104 - Standards & Drawings**

BOE	Estimators Experience - This estimate is based upon FY00 experience in reviw and updating the engineering standards and drawings. Experience Item Desc - This is a continual effort to evaluate, track, and revise current Engienering Standards and Standard Drawings.
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WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

Breakdown of Cost Data:  
Item - Upkeep of Engineering Standards and Drawings  
Units - Design Engineer  
Unit Cost - 50 hours  
  
Item - Document Control Support  
Units - 30 hours  
Unit Cost - \$45 per hour (Commodore)

Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	750	STRAIGHT TIME BASE	E070	MECHANICAL ENGINEERS	K252S	Engineering	Linear	50.00	Hours
	Factors 50 hours								
	A58	ASI	P170	OTHER ADMINISTRATIVE & PROFE	K252S	Engineering	Linear	1.350.00	Dollars
	Factors 30 hours for document control support		45 dollars per hour						

**Line Item LF100105 - ASME Program**

**BOE** Estimators Experience - This estimate was supported with FY99 actuals for the same activity. During FY00 the ASME program is for basic maintenance only.  
Experience Item Desc - This line item ensures compliance with the American Society of Mechanical Engineers (ASME) Piping and Vessel Codes as required by ASME Cod B31.3. The ASME Engineer is responsible for maintenance of Site standards, policies, and procedures involved with the ASME piping and vessel codes.  
Breakdown of Cost Data:  
Item - ASME Maintenance  
Units - ASME Project Manager  
Unit Cost - 30 hours

Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	750	STRAIGHT TIME BASE	E070	MECHANICAL ENGINEERS	K252S	Engineering	Linear	30.00	Hours
	Factors	30	Hours						

**Line Item LF100106 - Annual Assessments**

**BOE** Estimators Experience - This estimate is based upon the best guess of the Engineering Program's Manager  
Experience Item Desc - An annual engineering assessment must be completed of the site's engineering/safety practices  
Breakdown of Cost Data:  
Item - Annual Assessment  
Units - 3/4 of FTE  
Unit Cost - 729 hours @ 99.35 per hour (FY00 E2 rates effective July 1 [Option Year 1])

Resources	Cost Element			Skill		Department		Curve	Quantity	Units
	A53	E-2		E040	ELECTRICAL ENGINEERS	K252S	Engineering	Linear	54.319.61	Dollars
	Factors	729	hours	99.35	dollars per hour (E2)	0.75	3/4 FTE			

**Line Item LF100107 - Pressure Safety Program Management**

**BOE** Estimators Experience - This estimate is based upon the experience of the Pressure Safety Program project manager (R. Ritchard) attained in FY98 and FY99 while managing this program  
Experience Item Desc - This line item is the completion of th "Plan of Action Pressure Safety Program" This item includes the program administration and final report generation.  
Breakdown of Cost Data:  
Item - Program Manager  
Units - 1 FTE  
Unit Cost - 729 hours  
  
Item - Engineering Support  
Units - 2 months of support  
Unit Cost - \$61.5 per hour per LATA's current billing rate

Resources	Cost Element			Skill		Department		Curve	Quantity	Units	
	750	STRAIGHT TIME BASE		E070	MECHANICAL ENGINEERS		K252S	Engineering	Linear	729.00	Hours
	Factors		729	hours							
	A57	LATA		E040	ELECTRICAL ENGINEERS		K252S	Engineering	Linear	21,525.00	Dollars
	Factors		350	hours		61.5		dollars per hour (LATA)			

**Line Item LF100108 - Pressure Safety PRV Valve Replacement**

**BOE** Estimators Experience - This estimate is based upon workscope completed in FY98 and FY99 and the remaining plan for FY00  
Experience Item Desc - Replacement of PRVs and Steam PRVs in remaining site buildings to complete this project  
Breakdown of Cost Data:  
Item - PRV Purchases

WBS No: 1HAG10  
Activity ID: 1HAG1001P2

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project  
WBS Filter  
Activity Filter  
Baseline Devl  
1HAG  
\*

Starts In FY \*

Units - 25 valves  
Unit Cost - \$250 each

Item - Labor hours for Valve Installation  
Units - Mechanical Engineers 2 hours per valve; Health Physist 2 hours per valve; Planneres - 6 hours per valve; and 3 Pipe fitters/plumbers 4 hours per valve  
Unit Cost - times 25 valves -- labor hours or subcontracted dollars @ \$61.50 per hour

Item - Labor hours for Steam Valve Installation  
Units - Mechanical Engineers 40 hours per valve; Health Physist 40 hours per valve; Planneres - 100 hours per valve; and 3 Pipe fitters/plumbers 127 hours per valve  
Unit Cost - times 3 valves -- labor hours or subcontracted dollars @ \$61.50 per hour

Resources		Cost Element	Skill	Department	Curve	Quantity	Units
750		STRAIGHT TIME BASE	E070 MECHANICAL ENGINEERS	S100S SSQC Salaried	Linear	64.31	Hours
Factors	40	hours per valve	3	steam valves	0.53595 --- FY00 Mav Earned Value Factor		
750		STRAIGHT TIME BASE	E070 MECHANICAL ENGINEERS	S100S SSQC Salaried	Linear	26.80	Hours
Factors	2	hours per valve	25	valves	0.53595 --- FY00 Mav Earned Value Factor		
750		STRAIGHT TIME BASE	P080 HEALTH PHYSICISTS	S100S SSQC Salaried	Linear	26.80	Hours
Factors	2	hours per valve	25	valves	0.53595 --- FY00 Mav Earned Value Factor		
750		STRAIGHT TIME BASE	P080 HEALTH PHYSICISTS	S100S SSQC Salaried	Linear	64.31	Hours
Factors	40	hours per valve	3	steam valves	0.53595 --- FY00 Mav Earned Value Factor		
751		OVERTIME BASE & PRE.	C080 PLUMBERS AND PIPEFITTERS	K777C Construction	Linear	160.78	Hours
Factors	4	hours per valve	25	valves	3	Pipe Fitters/Plumbers	0.53595 --- FY00 Mav Earned Value Factor
751		OVERTIME BASE & PRE.	C080 PLUMBERS AND PIPEFITTERS	K777C Construction	Linear	1.755.59	Hours
Factors	127	hours per valve	3	steam valves	3	Pipe Fitters/Plumbers	1.53595 --- FY00 Mav Earned Value Factor
A5C		SUPPLIES	0000 NONE	K252S Engineering	Linear	3.349.67	Dollars
Factors	25	PRV valves	250	each valve cost	0.53595 --- FY00 Mav Earned Value Factor		
A5H		SUBCONTRACTED SRVS	P070 COST ESTIMATORS PLANNERS AN	K252S Engineering	Linear	4.944.12	Dollars
Factors	6	hours per valve	25	valves	61.5	dollars per hour	0.53595 --- FY00 Mav Earned Value Factor
A5H		SUBCONTRACTED SRVS	P070 COST ESTIMATORS PLANNERS AN	K252S Engineering	Linear	9.888.24	Dollars
Factors	100	hours per valve	3	steam valves	61.5	dollars per hour	0.53595 --- FY00 Mav Earned Value Factor

**Line Item LF100109 - Pressure Safety UT Thickness Testing**

**BOE**

Estimators Experience - This estimate is similar to performance in FY98 and FY99 for UT thickness testing.  
Experience Item Desc - The integrity of 12 selected pressure vessels will be checked using ultrasonic non-destructive testing  
Breakdown of Cost Data:  
Item - Testing Remaining Buildings  
Units - Industrial Engineers  
Unit Cost - 30 hours

Item - Testing Remaining Buildings  
Units - Supervision  
Unit Cost - 10 hours

Resources		Cost Element	Skill	Department	Curve	Quantity	Units
750		STRAIGHT TIME BASE	E130 OTHER ENGINEERS	C100S Closure Site Services	Linear	192.94	Hours
Factors	30	hours	12	vessels	0.53595 --- FY00 Mav Earned Value Factor		
750		STRAIGHT TIME BASE	M040 MANAGERS (GRADE 64 - 68)	C100S Closure Site Services	Linear	64.31	Hours
Factors	10	Hours	12	vessels	0.53595 --- FY00 Mav Earned Value Factor		

**Line Item LF100110 - Engineering Procedures Updates**

**BOE**

Estimators Experience - This estimate is based upon FY99 actuals incurred while updating the COEM, DES-210, SERM, and AMN-101.  
Experience Item Desc - Review/update site-wide procedures which impact the engineering discipline.  
Breakdown of Cost Data:  
Item - Technical Writer/Editor  
Units - 2 FTEs  
Unit Cost - 729 labor hours

Item - Engineer for Technical Writing/Review (LATA)  
Units - 578 hours



WBS No: 1HAG10  
Activity ID: 1HAG1001P2

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

Unit Cost - \$53.74 hours

**Resources**

Cost Element		Skill		Department		Curve	Quantity	Units
750	STRAIGHT TIME BASE	E020	CIVIL ENGINEERS	K252S	Engineering	Linear	729.00	Hours
Factors 729 hours								
750	STRAIGHT TIME BASE	P160	TECHNICAL WRITERS AND EDITOR	K252S	Engineering	Linear	729.00	Hours
Factors 729 hours								
A57	LATA	P160	TECHNICAL WRITERS AND EDITOR	K252S	Engineering	Linear	16.647.46	Dollars
Factors 578 hours								
		53.74 dollars per hour (LATA)		0.53595 --- FY00 May Earned Value Factor				

**Line Item LF100112 - CSI Specification Writing**

**BOE** Estimators Experience - This estimate is based upon the current use of our engineers for CSI Specification review, verification, and writing  
Experience Item Desc - CSI Specification review, verification, update, and writing  
Breakdown of Cost Data:  
Item - CSI Specification upkeep  
Units - 1 Engineer part time  
Unit Cost - 72.89 per hour per current billing rate

**Resources**

Cost Element		Skill		Department		Curve	Quantity	Units
A5H	SUBCONTRACTED SRVS	E020	CIVIL ENGINEERS	K252S	Engineering	Linear	53.136.81	Dollars
Factors 729 hours								
		72.89 dollars per hour						

Activity ID: 1HAG100200

Description: Engineering Programs Administration

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF100201	EP Administration	1.00	each	EE	7.400	7.400	219.114	44.553	0	263.667	90.902	354.569
SYS	Contingency And Escalation	1.00	ea	EE	0	0	0	0	33.880	33.880	0	33.880
Total for Activity 1HAG100200:						7.400	219.114	44.553	33.880	297.547	90.902	388.450

**Line Item LF100201 - EP Administration**

**BOE** Estimators Experience - This estimate is based upon required resources to manage and coordinate the Engineering Programs division in FY99.  
Experience Item Desc - This line item funds a full time Engineering Programs Manager, secretary, supplies, and travel.  
Breakdown of Cost Data:  
Item - Engineering Programs Administration  
Units - 2 FTEs  
Unit Cost - 1850 hours  
  
Item - Engineering Supplies  
Units - 42.5 FTEs (over the two years [24.5 in FY01 and 18 in FY02]) + Additional Engineering Requirements  
Unit Cost - 250 per person = \$10,625  
\$7,000 x 2 years = \$14,000  
  
Itemized Additions: \$7,000  
1 Memory Upgrades x \$140 = \$140  
70 Reams of Paper for the Fax Machine/Color Printer x \$10 = \$700  
1 Lot of Paper for 2 network printers = \$5,616  
1 Toner/Developer for Fax Machine x \$100 = \$100  
Recycle Boxes (1 lot of 50 boxes) = \$36  
Toner/Developer for 5si Printer = \$178  
2 Color Printer Toner x \$115 (\$70 for Black; \$45 for Color) = \$230  
  
Item - Engineering Organization's Travel  
Units - 4 trips on FY01 and 4 trips in FY02  
Unit Costs - estimated at \$2,292 per trip x 7 trip = \$18,336  
  
Units - 2 local Seminars  
Unit Costs - estimated at \$398 per seminare x 4 attendees/seminars = \$1,592  
  
Itemized Travel Cost Estimate: Duration is 4 working days  
Airfare - 7 day advance notice \$600;  
Car Rental - \$38/day x 5 = \$190;  
PerDiem for DC - \$46/day meals x 5 = \$230  
Hotel for DC - \$118/night x 4 nights = \$472

WBS No: 1HAG10  
Activity ID: 1HAG100200

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

DIA Airport Parking - 5 days X \$10 = \$50  
Average Registration Fee - \$750  
TOTAL Cost: 2,292

Seminar attendance: 4 attendees @ the UBC Seminar  
Car Mileage Rental - \$.32 per mile x 50 miles x 3 days = \$48;  
Average Registration Fee - \$350  
TOTAL Cost: \$398

Resources		Cost Element	Skill	Department	Curve	Quantity	Units
750	STRAIGHT TIME BASE	G010	ADMINISTRATIVE ASSISTANTS	K252S Engineering	Linear	3.700.00	Hours
Factors	1850	hours	2	years			
750	STRAIGHT TIME BASE	M030	MANAGEMENT INTEGRATORS (GR	K252S Engineering	Linear	3.700.00	Hours
Factors	1850	hours	2	years			
A5C	SUPPLIES	0000	NONE	K252S Engineering	Linear	24.625.00	Dollars
Factors	24625	supplies					
A5M	TRAVEL/TRAIN/RELOCAT	0000	NONE	K252S Engineering	Linear	1.592.00	Dollars
Factors	398	attendance @ UBC's local seminar	4	FTEs			
A5M	TRAVEL/TRAIN/RELOCAT	0000	NONE	K252S Engineering	Linear	18.336.00	Dollars
Factors	18336	travel					

**Line Item SYS - Contingency And Escalation**

**BOE**

Resources		Cost Element	Skill	Department	Curve	Quantity	Units
CON	CONTINGENCY	0000	NONE	ZDEPT No Department	Linear	22.032.03	Dollars
Factors	22032.0	Dollars					
ESC	ESCALATION	0000	NONE	ZDEPT No Department	Linear	11.848.10	Dollars
Factors	11848.1	Dollars					

Activity ID: 1HAG100301 Description: Project Support/SMEs FY02-04

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF100301	SMEs	1.00	each	EE	7.400	7.400	242.498	139.212	0	381.710	76.557	458.266
SYS	Contingency And Escalation	1.00	ea	EE	0	0	0	0	78.157	78.157	0	78.157
Total for Activity 1HAG100301:						7.400	242.498	139.212	78.157	459.866	76.557	536.423

**Line Item LF100301 - SMEs**

**BOE**

Estimators Experience - This estimate is based upon the expected need/use of Site-wide experts to review, coordinate, assess, technical issues on engineering disciplines

Experience Item Desc - This activity provides the Site SME of Structural Engineering, Thermal Dynamics, HEPA filters, Criticality Alarms, SAAMS, CAM Support, Instruments & Controls, Civil/Mechanical/Electrical/Architectural issues, and ASME Maintenance

Breakdown of Cost Data:  
Item - Mechanical Engineer  
Units - 1 of KH FTE  
Unit Cost - 1850 hours x 3 years

Item - Mechanical Engineer  
Units - 1 FTE  
Unit Cost - 1850 hours for FY04

Item - Subcontracted Engineer  
Units - 1 FTE (1850 hours) for FY02  
Unit Cost - \$93 hours per hour per FY00 Tenaera rates

This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.

Resources		Cost Element	Skill	Department	Curve	Quantity	Units
750	STRAIGHT TIME BASE	E070	MECHANICAL ENGINEERS	K252S Engineering	Linear	5.550.00	Hours
Factors	1850	hours for mechanical/electrical SME	3	years			

WBS No: 1HAG10  
Activity ID: 1HAG100301

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

750	STRAIGHT TIME BASE	E070	MECHANICAL ENGINEERS	K252S	Engineering	Max Backload	1.850.00	Hours
Factors	1850	Hours						
A5H	SUBCONTRACTED SRVS	E120	SAFETY ENGINEERS	K252S	Engineering	Max Frontload	139.211.60	Dollars
Factors	1850	hours for SME	93	dollars per hour				

0.80913 [SYS 061400] .80704 - System

**Line Item SYS - Contingency And Escalation**

**BOE**

Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	CON	CONTINGENCY	0000	NONE	ZDEPT	No Department	Linear	46.628.43	Dollars
	Factors 46628.4 Dollars								
	ESC	ESCALATION	0000	NONE	ZDEPT	No Department	Linear	31.528.21	Dollars
	Factors 31528.2 Dollars								

Activity ID: 1HAG100302 Description: Project Support/SMEs

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
Lf100302	SMEs	1.00	each	EE	3.700	3.700	119.973	274.446	0	394.418	57.227	451.645
SYS	Contingency And Escalation	1.00	ea	EE	0	0	0	0	23.892	23.892	0	23.892
Total for Activity 1HAG100302:						3.700	119.973	274.446	23.892	418.310	57.227	475.537

**Line Item Lf100302 - SMEs**

**BOE**

Estimators Experience - This estimate is based upon the expected need/use of Site-wide experts to review, coordinate, assess, technical issues on engineering disciplines

Experience Item Desc - This activity provides the Site SME of Structural Engineering, HEPA filters, Criticality Alarms, SAAMS, CAM Support, Instruments & Controls, Civil/Mechanical/Electrical/Architectural issues, and ASME Maintenance

Breakdown of Cost Data:  
Item - Electrical Engineer  
Units - 1 KH FTE  
Unit Cost - 1850 hours

Item - Mechanical Engineer  
Units - 1 KH FTE  
Unit Cost - 1850 hours

Item - Subcontracted Civil Engineer  
Units - 1 FTE (1850 hours)  
Unit Cost - \$82 hours per hour per FY00 Tenera rates

Item - Subcontracted Structural Engineer  
Units - 1 FTE (1850 hours)  
Unit Cost - \$82 hours per hour

This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.

Resources	Cost Element			Skill		Department		Curve	Quantity	Units	
	750	STRAIGHT TIME BASE		E040	ELECTRICAL ENGINEERS		K252S	Engineering	Linear	1.850.00	Hours
Factors			1850      hours for electrical SME								
750	STRAIGHT TIME BASE		E070	MECHANICAL ENGINEERS		K252S	Engineering	Linear	1.850.00	Hours	
Factors			1850      hours for mechanical SME								
A52	TENERA		E020	CIVIL ENGINEERS		K252S	Engineering	Linear	151.700.00	Dollars	
Factors			1850      hours - Civil SME		82      dollars per hour						
A5H	SUBCONTRACTED SRVS		E120	SAFETY ENGINEERS		K252S	Engineering	Linear	122.745.70	Dollars	
Factors			1850      hours - Structural SME		82      dollars per hour						

0.80913 [SYS 061400] .80704 - System

**Line Item SYS - Contingency And Escalation**

**BOE**

WBS No: 1HAG10  
Activity ID: 1HAG100302

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

Resources	Cost Element			Skill		Department		Curve	Quantity	Units
	CON	CONTINGENCY		0000	NONE	ZDEPT	No Department	Linear	14.395.02	Dollars
	Factors 14395.0 Dollars									
	ESC	ESCALATION		0000	NONE	ZDEPT	No Department	Linear	9.497.09	Dollars
	Factors 9497.09 Dollars									

Activity ID: 1HAG100400 Description: Program Infrastructure

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF100401	Procedure Upkeep	1.00	each	EE	3.720	3.720	102.362	310.800	0	413.162	42.466	455.628
LF100402	Standards/Standard Drawings Upkeep	1.00	each	EE	1.240	1.240	39.779	2.700	0	42.479	16.503	58.982
LF100404	CSI Specifications	1.00	each	EE	2.480	2.480	80.414	0	0	80.414	33.361	113.775
SYS	Contingency And Escalation	1.00	ea	EE	0	0	0	0	60.527	60.527	0	60.527
Total for Activity 1HAG100400:						7.440	222.555	313.500	60.527	596.582	92.330	688.912

**Line Item LF100401 - Procedure Upkeep**

**BOE**  
Estimators Experience - This estimate is based upon FY99 actuals incurred while updating the COEM, DES-210, SERM, and AMN-101.  
Experience Item Desc - Review/update site-wide procedures which impact the engineering discipline.  
Breakdown of Cost Data:  
Item - Technical Writer/Editor  
Units - 1,850 hours per year (full-time in FY01 for 4 months and 1 full-time in FY02)  
Unit Cost - \$84 per hours (Tenera's rate for FY00 plus escalation)  
  
Item - Civil Engineer for Technical Writing/Review  
Units - 2/3 of KH FTE  
Unit Cost - 1240 hours  
  
Item - Mechanical Engineer for Technical Writing/Review  
Units - 1/3 of KH FTE  
Unit Cost - 620 hours

Resources	Cost Element			Skill		Department		Curve	Quantity	Units	
	750	STRAIGHT TIME BASE		E020	CIVIL ENGINEERS		K252S	Engineering	Linear	2.480.00	Hours
	Factors	1240	hours	2		years					
	750	STRAIGHT TIME BASE		E070	MECHANICAL ENGINEERS		K252S	Engineering	Linear	1.240.00	Hours
	Factors	620	hours	2		years					
	A52	TENERA		E070	MECHANICAL ENGINEERS		K252S	Engineering	Linear	310.800.00	Dollars
Factors	1850	hours	2		years		84		dollars per hour		

**Line Item LF100402 - Standards/Standard Drawings Upkeep**

**BOE**  
Estimators Experience - This estimate is based upon FY00 experience in reviw and updating the engineering standards and drawings.  
Experience Item Desc - This is a continual effort to evaluate, track, and revise current Engienering Standards and Standard Drawings.  
Breakdown of Cost Data:  
Item - Upkeep of Engineering Standards and Drawings  
Units - 1/3 of KH Design Engineer  
Unit Cost - 620 hours per year  
  
Item - Document Control Support  
Units - 30 hours per year  
Unit Cost - \$45 per hour (Commodore)

Resources	Cost Element			Skill		Department		Curve	Quantity	Units
	750	STRAIGHT TIME BASE		E040	ELECTRICAL ENGINEERS	K252S	Engineering	Linear	1.240.00	Hours
	Factors	620 hours for standards revisions for KH- 2 years								
	A58	ASI		P170	OTHER ADMINISTRATIVE & PROFE	K252S	Engineering	Linear	2.700.00	Dollars
	Factors	30 hours 45 dollars per hour 2 years								

**Line Item LF100404 - CSI Specifications**

**BOE**  
Estimators Experience - This estimate is based upon the current use of our engineers for CSI Specification review, verification, and writing  
Experience Item Desc - CSI Specification review, verification, and update  
Breakdown of Cost Data:  
Item - CSI Specification upkeep

WBS No: 1HAG10  
Activity ID: 1HAG100400

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \* Starts In FY \*

Units - 1/3 of 2 KH Engineers Unit Cost - 620 hours												
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Resources	Cost Element			Skill		Department		Curve	Quantity	Units
	750	STRAIGHT TIME BASE		E040	ELECTRICAL ENGINEERS	K252S	Engineering	Linear	1.240.00	Hours
	Factors	620	hours	2	years					
	750	STRAIGHT TIME BASE		E070	MECHANICAL ENGINEERS	K252S	Engineering	Linear	1.240.00	Hours
	Factors	620	hours	2	years					

**Line Item SYS - Contingency And Escalation**

BOE										
Resources	Cost Element			Skill		Department		Curve	Quantity	Units
	CON	CONTINGENCY		0000	NONE	ZDEPT	No Department	Linear	39.396.88	Dollars
	Factors 39396.9 Dollars									
	ESC	ESCALATION		0000	NONE	ZDEPT	No Department	Linear	21.129.86	Dollars
	Factors 21129.9 Dollars									

Activity ID: 1HAG100401 Description: Program Infrastructure FY03-04

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF100401	Engineering Procedure/Standards Upkeep	1.00	each	EE	3.700	3.700	121.249	1.350	0	122.599	38.064	160.663
SYS	Contingency And Escalation	1.00	ea	EE	0	0	0	0	33.751	33.751	0	33.751
Total for Activity 1HAG100401:						3.700	121.249	1.350	33.751	156.350	38.064	194.413

**Line Item LF100401 - Engineering Procedure/Standards Upkeep**

BOE Estimators Experience - This estimate is based upon FY99 actuals & FY00 experience incurred supporting the upkeep of the Engineering Program Infrastructure.												
Experience Item Desc - Review/update site-wide procedures (such as the DES-210, and SERM); review and update the engineering standards and drawings (evaluate, track, and revise current Engineering Standards and Standard Drawings); CSI Specification review, verification, and update; and administer the site IWCP and ISM programs.												
Breakdown of Cost Data: Item - Upkeep of Engineering's Program Infrastructure Units - 1 Mechanical Engineer Unit Cost - 1850 hours per year												
Item - Document Control Support Units - 30 hours per year Unit Cost - \$45 per hour (Commodore)												

Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	750	STRAIGHT TIME BASE	E070	MECHANICAL ENGINEERS	K252S	Engineering	Linear	3,700.00	Hours
	Factors	1850 hours		2 years					
	A58	ASI	P170	OTHER ADMINISTRATIVE & PROFE	K252S	Engineering	Max Frontload	1,350.00	Dollars
	Factors	30 hours		45 dollars per hour					

**Line Item SYS - Contingency And Escalation**

BOE										
Resources	Cost Element			Skill		Department		Curve	Quantity	Units
	CON	CONTINGENCY		0000	NONE	ZDEPT	No Department	Linear	19.924.57	Dollars
	Factors 19924.6 Dollars									
	ESC	ESCALATION		0000	NONE	ZDEPT	No Department	Linear	13.826.17	Dollars
	Factors 13826.2 Dollars									

Activity ID: 1HAG100501 Description: Technical Issues FY02

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF100501	Emergent Issues	1.00	each	EE	1.850	1.850	59.348	7.282	0	66.630	20.768	87.398
SYS	Contingency And Escalation	1.00	ea	EE	0	0	0	0	16.739	16.739	0	16.739
Total for Activity 1HAG100501:						1.850	59.348	7.282	16.739	83.370	20.768	104.137

WBS No: 1HAG10  
Activity ID: 1HAG100501

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

**Line Item LF100501 - Emergent Issues**

BOE	Estimators Experience - This estimate is based upon the experience gained in FY98-00 for the need of funding planned for those unexpected yet necessary technical issues which arise throughout a fiscal year.											
	Experience Item Desc - This activity includes support to, preparation of, review of, and/or presentation of non-scheduled requested information throughout the fiscal year. It includes major projects (more than a 2 day effort of an SME) to support the Building Operations, Closure Projects, and DNFSB/DOE-HQs requests.											
	Breakdown of Cost Data:											
	Item - Civil Engineer											
	Units - 1 KH FTE											
	Unit Cost - 1850 hours											
	Item - Expert Assistance											
	Units - 80 hours (2 weeks of support)											
	Unit Cost - estimated \$95 per hour plus travel expenses											
	This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.											

Resources	Cost Element			Skill		Department		Curve	Quantity	Units		
	750	STRAIGHT TIME BASE		E040	ELECTRICAL ENGINEERS		K252S	Engineering	Linear	1.850.00	Hours	
	Factors		1850 hours for Civil Engineer									
	A5H	SUBCONTRACTED SRVS		0000	NONE		K252S	Engineering	Linear	1.132.79	Dollars	
	Factors		1400 travel expenses									
										0.80913	[SYS 061400]	.80704 - System
	A5H	SUBCONTRACTED SRVS		E120	SAFETY ENGINEERS		K252S	Engineering	Linear	6.149.42	Dollars	
	Factors		80 hours 95 dollars per hour for technical experts									
										0.80913	[SYS 061400]	.80704 - System

**Line Item SYS - Contingency And Escalation**

BOE										
Resources	Cost Element			Skill		Department		Curve	Quantity	Units
	CON	CONTINGENCY	0000	NONE	ZDEPT	No Department	Linear	11.509.92	Dollars	
	Factors 11509.9 Dollars									
	ESC	ESCALATION	0000	NONE	ZDEPT	No Department	Linear	5.229.36	Dollars	
	Factors 5229.37 Dollars									

Activity ID: 1HAG100502 Description: Technical Issues FY03

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF100502	Emergent Issues	1.00	each	EE	1.850	1.850	59,348	0	0	59,348	18,869	78,217
SYS	Contingency And Escalation	1.00	ea	EE	0	0	0	0	16.828	16,828	0	16,828
Total for Activity 1HAG100502:						1.850	59,348	0	16.828	76,176	18,869	95,045

**Line Item LF100502 - Emergent Issues**

BOE	Estimators Experience - This estimate is based upon the experience gained in FY98-00 for the need of funding planned for those unexpected yet necessary technical issues which arise throughout a fiscal year. It is expected that more electrical/mechanical issues will arise as the building's utilities are shut-down and removed.											
	Experience Item Desc - This activity includes support to, preparation of, review of, and/or presentation of non-scheduled requested information throughout the fiscal year. It includes major projects (more than a 2 day effort of an SME) to support the Building Operations, Closure Projects, and DNFSB/DOE-HQs requests.											
	Breakdown of Cost Data:											
	Item - Engineer											
	Units - 1 KH FTE											
	Unit Cost - 1850 hours											

Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	750	STRAIGHT TIME BASE	E040	ELECTRICAL ENGINEERS	K252S	Engineering	Linear	1.850.00	Hours
Factors 1850 hours									

**Line Item SYS - Contingency And Escalation**

BOE

WBS No: 1HAG10  
Activity ID: 1HAG100502

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

Resources		Cost Element	Skill	Department	Curve	Quantity	Units
CON	CONTINGENCY	0000	NONE	ZDEPT	No Department	Linear	10.184.98 Dollars
Factors		10185 Dollars					
ESC	ESCALATION	0000	NONE	ZDEPT	No Department	Linear	6.643.13 Dollars
Factors		6643.13 Dollars					

Activity ID: 1HAG100600 Description: Engineering Annual Assessments FY01

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF100601	Annual Assessment	1.00	each	EE	0	0	0	185.000	0	185.000	0	185.000
SYS	Contingency And Escalation	1.00	ea	EE	0	0	0	0	9.787	9.787	0	9.787
Total for Activity 1HAG100600:						0	0	185.000	9.787	194.787	0	194.787

**Line Item LF100601 - Annual Assessment**

BOE	Estimators Experience - This estimate is based upon the best guess of the Engineering Program's Manager Experience Item Desc - An Annual Assessment must be completed of the site's engineering/safety practices Breakdown of Cost Data: Item - Annual Assessment Units - 1 FTE Unit Cost - 1850 hours @ 100 per hour (FY00 E2 rate is \$99.35)
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Resources		Cost Element	Skill	Department	Curve	Quantity	Units
A53	E-2	E040	ELECTRICAL ENGINEERS	K252S	Engineering	Linear	185.000.00 Dollars
Factors		1850 hours 100 dollars per hour average for E2					

**Line Item SYS - Contingency And Escalation**

BOE										
Resources	Cost Element			Skill		Department		Curve	Quantity	Units
	CON	CONTINGENCY		0000	NONE	ZDEPT	No Department	Linear	5.896.40	Dollars
	Factors		5896.4 Dollars							
	ESC	ESCALATION		0000	NONE	ZDEPT	No Department	Linear	3.890.14	Dollars
	Factors		3890.14 Dollars							

Activity ID: 1HXXXG1013 Description: End of Site Design Authority

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF100103	Site Design Authority	0.96	each	EE	0	0	0	4.101	0	4.101	0	4.101
SYS	Contingency And Escalation	1.00	ea	EE	0	0	0	0	3.472	3.472	0	3.472
Total for Activity 1HXXXG1013:						0	0	4.101	3.472	7.573	0	7.573

**Line Item LF100103 - Site Design Authority**

BOE	Estimators Experience - This estimate is based upon similar work conducted in FY99. Experience Item Desc - This line item funds a full time Site Chief Engineer and the services of an off-site technical expert, when required. It also fund the Engineering division's supplies and travel. Breakdown of Cost Data: Item - Travel for Technical Expert Units - 3 trips Unit Cost - approximately \$1,250 per trip (estimate taken from actual travel cost of \$1,267.75 for one week trip of Beckman & Associates in FY00)  Item - Engineering Supplies Units - 3 FTEs of office supplies + additional requirements Units - 3 FTEs x \$250 per person = \$750 + \$3,500 in additional requirements  Itemized Additional Requirements: \$3,500 1 Memory Upgrades x \$130 = \$130 2 Software Purchases x \$398 = \$796 70 Reams of Paper for the Fax Machine/Color Printer x \$10 = \$700 Paper for 2 network printers = \$1,336 1 Toner/Developer for Fax Machine x \$100 = \$100 Recycle Boxes (1 lot of 50 boxes) = \$30 Toner/Developer for 5si Printer = \$178
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WBS No: 1HAG10  
Activity ID: 1HXXXG1013

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

2 Color Printer Toner x \$115 (\$70 for Black; \$45 for Color) = \$230

Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	A5C	SUPPLIES	0000	NONE	K252S	Engineering	Linear	4.250.00	Dollars

Factors 4250 organization's supplies

**Line Item SYS - Contingency And Escalation**

BOE

Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	CON	CONTINGENCY	0000	NONE	ZDEPT	No Department	Linear	2.557.02	Dollars

Factors 2557.02 Dollars

		ESC	ESCALATION	0000	NONE	ZDEPT	No Department	Linear	914.70	Dollars
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Factors 914.70 Dollars

WBS No: 1HAG20 Title: Engineering Records

Activity ID: 1HAG200020 Description: Engineering Services FY02-03

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LG200P01	Equipment Maintenance Contracts	1.00	each	EE	0	0	0	128.438	0	128.438	0	128.438
LG200P02	Design Document Control	1.00	each	EE	0	0	0	84.250	0	84.250	0	84.250
LG200P03	Archive Completed Project Files	1.00	each	EE	0	0	0	69.420	0	69.420	0	69.420
LG200P04	CAD Operations	1.00	each	EE	0	0	0	92.530	0	92.530	0	92.530
LG200P05	Engineering Information Management	1.00	each	EE	0	0	0	364.000	0	364.000	0	364.000
LG200P07	Microfilming Contract	1.00	each	EE	0	0	0	14.564	0	14.564	0	14.564
SYS	Contingency And Escalation	1.00	ea	EE	0	0	0	0	149.259	149.259	0	149.259
Total for Activity 1HAG200020:						0	0	753.202	149.259	902.461	0	902.461

**Line Item LG200P01 - Equipment Maintenance Contracts**

BOE		Estimator Experience - This estimate is based upon FY99 experience and Vendor Quotes for site equipment maintenance.										
		Item Desc - Support contracts with Xerox for the maintenance of the following machines: Xerox 7085, 2510, and 2515; OCE for maintenance of the TC300 and the 3000NT Aperture Card Scanner; Docutek for microfilm reader; Fujitsu for maintenance on a Fujitsu Scanner; Hewlett Packard for HP 755CM Plotter (color plotter) in support of the SDDC equipment. This line item also covers contracts with Imation Corp, Parametric Technologies, and Service Resource Agency for site DOCUMENT CONTROL and CAD equipment.										
		Breakdown of Cost Data: Item - Subcontracted Maintenance Unit Cost - \$5,100 per month										
		Item - Equipment Rentals Units - 24 months Unit Cost - \$1225 per month										
		This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.										

Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	A5H	SUBCONTRACTED SRVS	0000	NONE	K252S	Engineering	Linear	99.038.03	Dollars

Factors 5100 \$/month 24 months

		A5L	RENTALS	0000	NONE	K252S	Engineering	Linear	29.400.00	Dollars
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Factors 1225 \$/month 24 months

0.80913 [SYS 061400] .80704 - System

**Line Item LG200P02 - Design Document Control**

BOE		Estimators Experience - This estimate is based upon similar work conducted in FY99 under charge number NJ680200.										
		Experience Item Desc - Investigation/Disposition of Abandoned documents includes identifying the document; searching the database to check currency/revision level; contacting company engineering representative to determine status; creating central project file; sending to archival storage; updating EDOC database if applicable; sending for microfilming if applicable; scanning if applicable; sending for updating of Master drawing if applicable; and/or shredding [UCNI] or recycling as appropriate. This line item also includes aperture card conversion which entails collecting drawing number series to be scanned, logging for shipment offsite, verifying the return of all cards, and performing a random quality check of digital images upon return.										



WBS No: 1HAG20  
Activity ID: 1HAG200020

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

Breakdown of Cost Data:  
Item - Subcontracted Support Contract with CAS  
Units - 850 hour per year for microfilming, aperture card work, and control of doc/dwg maintenance  
Unit Cost - \$45.00/hour  
  
Item - Document Control Microfilming Classified Documents  
Units - Source One Subcontracted Support  
Unit Cost - \$3.75 per document x approximately 500 documents per year  
  
Item - DDRS Software Upgrade  
Units - Supply purchase 1 per year  
Unit Costs - \$2,000 per upgrade

Resources	Cost Element			Skill		Department		Curve	Quantity	Units
	A55	SOURCE ONE		0000	NONE	K252S	Engineering	Linear	3.750.00	Dollars
	Factors	500	drawings per year	3.75	\$/drawing	2	years			
	A58	ASI		G010	ADMINISTRATIVE ASSISTANTS	K252S	Engineering	Linear	76.500.00	Dollars
	Factors	850	hours	45	\$ per hour	2	years			
	A5C	SUPPLIES		0000	NONE	K252S	Engineering	Trianglr Decr	4.000.00	Dollars
	Factors	1	uparade per year	2	years	2000	each upgrade			

**Line Item LG200P03 - Archive Completed Project Files**

**BOE**  
Estimator Experience - This line item estimate is based upon the FY99 baseline and actual costs.  
  
Item Desc - Work includes verifying and checking for adequate signatures; ensuring that the records match the documents listed on the transmittal form; tracking and logging in the database (and receipts); preparation of archival documentation; controlling storage of records prior to shipping; obtaining signatures and shipping records to long term storage; and maintaining the historical file.  
  
Breakdown of Cost Data:  
Item - Records Management/Work Control Document Support  
Units - 534 record boxes in FY02-3  
Unit Costs - Source One estimate of May 2, 2000 is a cost of \$65 per box.

Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	A55	SOURCE ONE	0000	NONE	K252S	Engineering	Linear	69.420.00	Dollars
	Factors	534 boxes of records to archiving at Fed	65	dollars per box for Source One	2	years			

**Line Item LG200P04 - CAD Operations**

**BOE**  
Estimator Experience - This estimate is based upon the FY99 baseline and actual costs incurred on this same work scope.  
  
Item Desc - This line item includes the AutoCad version 15 software upgrade; performing the CAD monthly backup and quarterly archive operations; installing and testing the CAD software upgrades; problem solving and user support each week.  
  
Breakdown of Cost Data:  
Item - Install/Test Software Upgrades; Tape Backup/Archive  
Units - 100 hours per quarter  
Unit Cost - \$57 per hour (per the CAS POC on 2/23/99)  
  
Item - AutoCAD Software Upgrades - CAD upgrades  
Units - 6 upgrades per year  
Unit Costs - \$1,200 each  
  
Additional Equipment Requirements: \$32,530  
SunMicro System work stations for computer vision - 5 replacements X \$3,950 = \$19,750  
Replacement of Desktop PCs - 2 PCs in FY02; and 2 PC in FY03 X \$2,500 = \$10,000  
Printer Toner Cartridges for 5si - 5 each year x 2 years X \$178 each = \$1,780  
Paper for Fax Machines & Toner Cartridges - 50 reams X 2 years X \$10 each = \$1,000

Resources	Cost Element			Skill		Department		Curve	Quantity	Units
	A58	ASI		G010	ADMINISTRATIVE ASSISTANTS	K252S	Engineering	Linear	45.600.00	Dollars
	Factors	100	hours per quarter	57	per hour	8	quarters			
	A5C	SUPPLIES		0000	NONE	K252S	Engineering	Linear	32.530.00	Dollars
	Factors	32530	computer equipment							

WBS No: 1HAG20  
Activity ID: 1HAG200020

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

A5C	SUPPLIES	0000	NONE	K252S	Engineering	Linear	14.400.00	Dollars
Factors	1200 computer upgrades	2	years	6	upgrades per year			

**Line Item LG200P05 - Engineering Information Management**

BOE	Estimator Experience - This estimate is based upon the same line item budgeted in FY99.  Item Desc - Support SDDC and associated users (maintain and implement system enhancements on engineering documentation, run ad hoc reports, troubleshoot program problems, etc.); Maintain the Web Site including updating the "News"; programming system improvements; ensuring electronic images are viewable/retrievable; Completion of 2 inventories per year (1 Capital audit and 1 Wall-to-Wall); and Troubleshooting Engineering Software problems, system problems, and hardware problems.  Breakdown of Cost Data: Item - Subcontracted Support (CAS) Units - 40 hours per week Unit Cost - \$91 per hour (estimated average CAS rate with escalation)							
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Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	A58	ASI	P170	OTHER ADMINISTRATIVE & PROFE	K252S	Engineering	Linear	364.000.00	Dollars
	Factors	40	hours per week	50	weeks per year	2	years	91	dollars per hour

**Line Item LG200P07 - Microfilming Contract**

BOE	Estimators Experience - This estimate is based upon the American Micro Data's contract (900260) currently in use. Experience Item Desc - Microfilming of Engineering Design Drawings Breakdown of Cost Data: Item - Microfilming of Design Drawings Units - Approximately 300 documents per month x 24 months (June FY00 through September FY04) Unit Cost - \$750 per month  This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.							
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Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	A5H	SUBCONTRACTED SRVS	0000	NONE	K252S	Engineerina	Linear	14.564.42	Dollars
	Factors	750 per month	24	months					

0.80913 [SYS 061400] .80704 - Svsstem

**Line Item SYS - Contingency And Escalation**

BOE										
Resources	Cost Element			Skill		Department		Curve	Quantity	Units
	CON	CONTINGENCY		0000	NONE	ZDEPT	No Department	Linear	102.807.40	Dollars
	Factors 102807 Dollars									
	ESC	ESCALATION		0000	NONE	ZDEPT	No Department	Linear	46.451.32	Dollars
	Factors 46451.3 Dollars									

Activity ID: 1HAG2000P2 Description: Engineering Services FY00-01

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LG200P01	Equipment Maintenance Contracts	1.00	each	EE	0	0	0	85.625	0	85.625	0	85.625
LG200P02	Design Document Control	1.00	each	EE	0	0	0	92.421	0	92.421	0	92.421
LG200P03	Archive Completed Project Files	1.00	each	EE	0	0	0	39.045	0	39.045	0	39.045
LG200P04	CAD Operations	1.00	each	EE	0	0	0	86.924	0	86.924	0	86.924
LG200P05	Engineering Information Mgmt.	1.00	ea	EE	0	0	0	249.340	0	249.340	0	249.340
LG200P06	Engineering Support Program Administration	1.00	each	EE	2.535	2.535	107.995	0	0	107.995	51.829	159.824
LG200P07	Microfilming Contract	1.00	each	EE	0	0	0	9.710	0	9.710	0	9.710
SYS	Contingency And Escalation	1.00	ea	EE	0	0	0	0	26.079	26.079	0	26.079
Total for Activity 1HAG2000P2:						2.535	107.995	563.065	26.079	697.139	51.829	748.968

**Line Item LG200P01 - Equipment Maintenance Contracts**

BOE	Estimator Experience - This estimate is based upon FY99 experience and Vendor Quotes for site equipment maintenance.  Item Desc - Support contracts with Xerox for the maintenance of the following machines: Xerox 7085, 2510, and 2515; OCE for maintenance of the TC300 and the 3000NT Aperture Card Scanner; Docutek for microfilm reader; Fujitsu for maintenance on a Fujitsu Scanner; Hewlett Packard for HP 755CM Plotter (color plotter) in support of the SDDC equipment. This line item also covers contracts with Imation Corp, Parametric Technologies, and Service Resource Agency for							
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WBS No: 1HAG20  
Activity ID: 1HAG2000P2

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

site DOCUMENT CONTROL and CAD equipment.

Breakdown of Cost Data:

Item - Subcontracted Maintenance  
Units - 16 months: 4 months in FY00 + 12 months in FY01 of service  
Unit Cost - \$5,100 per month

Item - Equipment Rentals  
Units - 16 months  
Unit Cost - \$1225 per month

This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.

**Resources**

Cost Element			Skill		Department		Curve	Quantity	Units
A5H	SUBCONTRACTED SRVS		0000	NONE	K252S	Engineering	Linear	66.025.35	Dollars
Factors	5100	\$/month	16	months					
								0.80913 [SYS 061500] .80704 - System	
A5L	RENTALS		0000	NONE	K252S	Engineering	Linear	19.600.00	Dollars
Factors	1225	\$/month	16	months					

**Line Item LG200P02 - Design Document Control**

**BOE**

Estimators Experience - This estimate is based upon similar work conducted in FY99 under charge number NJ680200.

Experience Item Desc - Investigation/Disposition of Abandoned documents includes identifying the document; searching the database to check currency/revision level; contacting company engineering representative to determine status; creating central project file; sending to archival storage; updating EDOC database if applicable; sending for microfilming if applicable; scanning if applicable; sending for updating of Master drawing if applicable; and/or shredding [UCNI] or recycling as appropriate. This line item also includes aperture card conversion which entails collecting drawing number series to be scanned, logging for shipment offsite, verifying the return of all cards, and performing a random quality check of digital images upon return.

Breakdown of Cost Data:

Item - Subcontracted Support Contract with CAS  
Units - 850 hour per year for microfilming, aperture card work, and control of doc/dwg maintenance  
Unit Cost - \$45.00/hour

Item - Document Control Microfilming Classified Documents  
Units - Source One Subcontracted Support  
Unit Cost - \$3.75 per document x approximately 500 documents per year

Item - DDRS Software Upgrade  
Units - Supply purchase 1 per year  
Unit Costs - \$2,000 per upgrade

Item - Records Management/Work Control Document Support  
Units -534 record boxes in FY00-01  
Unit Costs - Source One estimate of May 2, 2000 is a cost of \$65 per box.

**Resources**

Cost Element			Skill		Department		Curve	Quantity	Units
A55	SOURCE ONE		0000	NONE	K252S	Engineering	Linear	2.568.75	Dollars
Factors	500	drawings per year	3.75	\$/drawing	1.37	years			
A55	SOURCE ONE		0000	NONE	K252S	Engineering	Linear	34.710.00	Dollars
Factors	534	boxes of records to archiving at Fed	65	dollars per box for Source One					
A58	ASI		G010	ADMINISTRATIVE ASSISTANTS	K252S	Engineering	Linear	52.402.50	Dollars
Factors	850	hours	45	\$ per hour	1.37	years			
A5C	SUPPLIES		0000	NONE	K252S	Engineering	Triandlr Decr	2.740.00	Dollars
Factors	1	upgrade per year	1.37	years	2000	each upgrade			

**Line Item LG200P03 - Archive Completed Project Files**

**BOE**

Estimator Experience - This line item estimate is based upon the FY99 baseline and actual costs.

Item Desc - Work includes verifying and checking for adequate signatures; ensuring that the records match the documents listed on the transmittal form; tracking and logging in the database (and receipts); preparation of archival documentation; controlling storage of records prior to shipping; obtaining signatures and shipping records to long term storage; and maintaining the historical file.

WBS No: 1HAG20  
Activity ID: 1HAG2000P2

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

Breakdown of Cost Data:  
Item - Subcontracted Support (CAS)  
Units - 1.25 hours per record x 600 records  
Unit Cost - 38 per hour

Resources		Cost Element	Skill	Department	Curve	Quantity	Units
A58	ASI		P170 OTHER ADMINISTRATIVE & PROFE	K252S Engineering	Front Loaded	39.045.00	Dollars
Factors	1.25	hour per record	600	records	1.37	years	38 dollars per hour

**Line Item LG200P04 - CAD Operations**

BOE	Estimator Experience - This estimate is based upon the FY99 baseline and actual costs incurred on this same work scope.						
	Item Desc - This line item includes the AutoCad version 15 software upgrade; performing the CAD monthly backup and quarterly archive operations; installing and testing the CAD software upgrades; problem solving and user support each week.						
	Breakdown of Cost Data: Item - Install/Test Software Upgrades; Tape Backup/Archive Units - 100 hours per quarter Unit Cost - \$57 per hour (per the CAS POC on 2/23/99)						
	Item - AutoCAD Software Upgrades - CAD upgrades Units - 6 upgrades per year Unit Costs - \$1,200 each						
	Additional Equipment Requirements: \$48,560 SunMicro System work stations for computer vision - 7 replacements X \$4,000 = \$28,000 Replacement of Desktop PCs - 3 PCs in FY01; 2 in FY02; and 1 PC in FY04 X \$2,500 = \$15,000 Printer Toner Cartridges for 5si - 5 each year x 4 years X \$178 each = \$3,560 Paper for Fax Machines & Toner Cartridges - 50 reams X 4 years X \$10 each = \$2,000						

Resources		Cost Element	Skill	Department	Curve	Quantity	Units
A58	ASI		G010 ADMINISTRATIVE ASSISTANTS	K252S Engineering	Linear	28.500.00	Dollars
Factors	100	hours per quarter	57	per hour	5	quarters	
A5C	SUPPLIES		0000 NONE	K252S Engineering	Linear	9.864.00	Dollars
Factors	1200	computer upgrades	1.37	years	6	upgrades per year	
A5C	SUPPLIES		0000 NONE	K252S Engineering	Trianglr Decr	48.560.00	Dollars
Factors	48560	computer equipment					

**Line Item LG200P05 - Engineering Information Mgmt.**

BOE	Estimator Experience - This estimate is based upon the same line item budgeted in FY99.						
	Item Desc - Support SDDC and associated users (maintain and implement system enhancements on engineering documentation, run ad hoc reports, troubleshoot program problems, etc.); Maintain the Web Site including updating the "News"; programming system improvements; ensuring electronic images are viewable/retrievable; Completion of 2 inventories per year (1 Capital audit and 1 Wall-to-Wall); and Troubleshooting Engineering Software problems, system problems, and hardware problems.						
	Breakdown of Cost Data: Item - Subcontracted Support (CAS) Units - 40 hours per week Unit Cost - \$91 per hour (estimated average CAS rate with escalation)						

Resources		Cost Element	Skill	Department	Curve	Quantity	Units
A58	ASI		P170 OTHER ADMINISTRATIVE & PROFE	K252S Engineering	Linear	249.340.00	Dollars
Factors	40	hours per week	50	weeks per year	1.37	years	91 dollars per hour

**Line Item LG200P06 - Engineering Support Program Administration**

BOE	Estimator Experience - This estimate is based upon the same line item budgeted in FY99 -- 1 FTE for Managing the Engineering Records division.						
	Item Desc - This line item consists of tasks performed by the Manager of Engineering Records.						
	Breakdown of Cost Data: Item - Mgmt of Engineering Records Units - 1850 hours per year (4 years plus 1/3 of FY00)						

Resources		Cost Element	Skill	Department	Curve	Quantity	Units
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WBS No: 1HAG20  
Activity ID: 1HAG2000P2

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

750	STRAIGHT TIME BASE	M030	MANAGEMENT INTEGRATORS (GR	K252S	Engineering	Linear	2,534.50	Hours
Factors	1850	hours per year	1.37	years				

**Line Item LG200P07 - Microfilming Contract**

BOE

Estimators Experience - This estimate is based upon the American Micro Data's contract (900260)currently in use.  
Experience Item Desc - Microfilming of Engineering Design Drawings  
Breakdown of Cost Data:  
Item - Microfilming of Design Drawings  
Units - Approximately 300 documents per month x 16 months (June FY00 through September FY01)  
Unit Cost - \$750 per month

This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.

Resources

Cost Element		Skill		Department		Curve	Quantity	Units
A5H	SUBCONTRACTED SRVS	0000	NONE	K252S	Engineering	Linear	9,709.61	Dollars
Factors	750	per month	16	months				

0.80913 [SYS 061500] .80704 - System

**Line Item SYS - Contingency And Escalation**

BOE

Resources

Cost Element		Skill		Department		Curve	Quantity	Units
CON	CONTINGENCY	0000	NONE	ZDEPT	No Department	Linear	15,172.19	Dollars
Factors	15172.2	Dollars						
ESC	ESCALATION	0000	NONE	ZDEPT	No Department	Linear	10,906.64	Dollars
Factors	10906.6	Dollars						

Activity ID: 1HXXXAG202

Description: End of Engineering Services

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LG200P01	Equipment Maintenance Contracts	0.44	each	EE	0	0	0	56,332	0	56,332	0	56,332
LG200P02	Design Document Control	0.44	each	EE	0	0	0	36,952	0	36,952	0	36,952
LG200P03	Archive Completed Project Files	0.44	each	EE	0	0	0	30,447	0	30,447	0	30,447
LG200P04	CAD Operations	0.44	each	EE	0	0	0	40,583	0	40,583	0	40,583
LG200P05	Engineering Information Management	0.44	each	EE	0	0	0	159,649	0	159,649	0	159,649
LG200P07	Microfilming Contract	0.44	each	EE	0	0	0	6,388	0	6,388	0	6,388
SYS	Contingency And Escalation	1.00	ea	EE	0	0	0	0	47,080	47,080	0	47,080
Total for Activity 1HXXXAG202:						0	0	330,352	47,080	377,432	0	377,432

**Line Item LG200P01 - Equipment Maintenance Contracts**

BOE

Estimator Experience - This estimate is based upon FY99 experience and Vendor Quotes for site equipment maintenance.  
Item Desc - Support contracts with Xerox for the maintenance of the following machines: Xerox 7085, 2510, and 2515; OCE for maintenance of the TC300 and the 3000NT Aperture Card Scanner; Docutek for microfilm reader; Fujitsu for maintenance on a Fujitsu Scanner; Hewlett Packard for HP 755CM Plotter (color plotter) in support of the SDDC equipment. This line item also covers contracts with Imation Corp, Parametric Technologies, and Service Resource Agency for site DOCUMENT CONTROL and CAD equipment.

Breakdown of Cost Data:  
Item - Subcontracted Maintenance  
Unit Cost - \$5,100 per month

Item - Equipment Rentals  
Units - 24 months  
Unit Cost - \$1225 per month

This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.

Resources

Cost Element		Skill		Department		Curve	Quantity	Units
A5H	SUBCONTRACTED SRVS	0000	NONE	K252S	Engineering	Linear	99,038.03	Dollars
Factors	5100	\$/month	24	months				

0.80913 [SYS 061400] .80704 - System

WBS No: 1HAG20  
Activity ID: 1HXXXAG202

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

A5L	RENTALS	0000	NONE	K252S	Engineering	Linear	29,400.00	Dollars
Factors	1225 \$/month		24 months					

**Line Item LG200P02 - Design Document Control**

**BOE**

Estimators Experience - This estimate is based upon similar work conducted in FY99 under charge number NJ680200.

Experience Item Desc - Investigation/Disposition of Abandoned documents includes identifying the document; searching the database to check currency/revision level; contacting company engineering representative to determine status; creating central project file; sending to archival storage; updating EDOC database if applicable; sending for microfilming if applicable; scanning if applicable; sending for updating of Master drawing if applicable; and/or shredding [UCNI] or recycling as appropriate. This line item also includes aperture card conversion which entails collecting drawing number series to be scanned, logging for shipment offsite, verifying the return of all cards, and performing a random quality check of digital images upon return.

Breakdown of Cost Data:

Item - Subcontracted Support Contract with CAS

Units - 850 hour per year for microfilming, aperture card work, and control of doc/dwg maintenance

Unit Cost - \$45.00/hour

Item - Document Control Microfilming Classified Documents

Units - Source One Subcontracted Support

Unit Cost - \$3.75 per document x approximately 500 documents per year

Item - DDRS Software Upgrade

Units - Supply purchase 1 per year

Unit Costs - \$2,000 per upgrade

**Resources**

Cost Element		Skill		Department		Curve	Quantity	Units
A55	SOURCE ONE	0000	NONE	K252S	Engineering	Linear	3,750.00	Dollars
Factors	500 drawings per year		3.75 \$/drawing		2 years			
A58	ASI	G010	ADMINISTRATIVE ASSISTANTS	K252S	Engineering	Linear	76,500.00	Dollars
Factors	850 hours		45 \$ per hour		2 years			
A5C	SUPPLIES	0000	NONE	K252S	Engineering	Trianglr Decr	4,000.00	Dollars
Factors	1 upgrade per year		2 years		2000 each upgrade			

**Line Item LG200P03 - Archive Completed Project Files**

**BOE**

Estimator Experience - This line item estimate is based upon the FY99 baseline and actual costs.

Item Desc - Work includes verifying and checking for adequate signatures; ensuring that the records match the documents listed on the transmittal form; tracking and logging in the database (and receipts); preparation of archival documentation; controlling storage of records prior to shipping; obtaining signatures and shipping records to long term storage; and maintaining the historical file.

Breakdown of Cost Data:

Item - Records Management/Work Control Document Support

Units - 534 record boxes in FY02-3

Unit Costs - Source One estimate of May 2, 2000 is a cost of \$65 per box.

**Resources**

Cost Element		Skill		Department		Curve	Quantity	Units
A55	SOURCE ONE	0000	NONE	K252S	Engineering	Linear	69,420.00	Dollars
Factors	534 boxes of records to archiving at Fed		65 dollars per box for Source One		2 years			

**Line Item LG200P04 - CAD Operations**

**BOE**

Estimator Experience - This estimate is based upon the FY99 baseline and actual costs incurred on this same work scope.

Item Desc - This line item includes the AutoCad version 15 software upgrade; performing the CAD monthly backup and quarterly archive operations; installing and testing the CAD software upgrades; problem solving and user support each week.

Breakdown of Cost Data:

Item - Install/Test Software Upgrades; Tape Backup/Archive

Units - 100 hours per quarter

Unit Cost - \$57 per hour (per the CAS POC on 2/23/99)

Item - AutoCAD Software Upgrades - CAD upgrades

Units - 6 upgrades per year

Unit Costs - \$1,200 each

WBS No: 1HAG20  
Activity ID: 1HXXXAG202

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

Additional Equipment Requirements: \$32,530  
SunMicro System work stations for computer vision - 5 replacements X \$3,950 = \$19,750  
Replacement of Desktop PCs - 2 PCs in FY02; and 2 PC in FY03 X \$2,500 = \$10,000  
Printer Toner Cartridges for 5si - 5 each year x 2 years X \$178 each = \$1,780  
Paper for Fax Machines & Toner Cartridges - 50 reams X 2 years X \$10 each = \$1,000

Resources		Cost Element	Skill	Department	Curve	Quantity	Units
A58	ASI	G010	ADMINISTRATIVE ASSISTANTS	K252S	Engineering	Linear	45.600.00Dollars
Factors	100	hours per quarter	57	per hour	8	quarters	
A5C	SUPPLIES	0000	NONE	K252S	Engineering	Linear	32.530.00Dollars
Factors	32530	computer equipment					
A5C	SUPPLIES	0000	NONE	K252S	Engineering	Linear	14.400.00Dollars
Factors	1200	computer upgrades	2	years	6	upgrades per year	

**Line Item LG200P05 - Engineering Information Management**

BOE	Estimator Experience - This estimate is based upon the same line item budgeted in FY99.						
	Item Desc - Support SDDC and associated users (maintain and implement system enhancements on engineering documentation, run ad hoc reports, troubleshoot program problems, etc.); Maintain the Web Site including updating the "News"; programming system improvements; ensuring eletronic images are viewable/retrievable; Completion of 2 inventories per year (1 Capital audit and 1 Wall-to-Wall); and Troubleshooting Engineering Software problems, system problems, and hardware problems.						
	Breakdown of Cost Data: Item - Subcontracted Support (CAS) Units - 40 hours per week Unit Cost - \$91 per hour (estimated averate CAS rate with excalation)						

Resources		Cost Element	Skill	Department	Curve	Quantity	Units
A58	ASI	P170	OTHER ADMINISTRATIVE & PROFE	K252S	Engineering	Linear	364.000.00Dollars
Factors	40	hours per week	50	weeks per year	2	years	91 dollars per hour

**Line Item LG200P07 - Microfilming Contract**

BOE	Estimators Experience - This estimate is based upon the American Micro Data's contract (900260)currently in use. Experience Item Desc - Microfilming of Engineering Design Drawings Breakdown of Cost Data: Item - Microfilming of Design Drawings Units - Approximately 300 documents per month x 24 months (June FY00 through September FY04) Unit Cost - \$750 per month						
	This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.						

Resources		Cost Element	Skill	Department	Curve	Quantity	Units
A5H	SUBCONTRACTED SRVS	0000	NONE	K252S	Engineering	Linear	14.564.42Dollars
Factors	750	per month	24	months			

0.80913 [SYS 061400] .80704 - System

**Line Item SYS - Contingency And Escalation**

BOE							
Resources		Cost Element	Skill	Department	Curve	Quantity	Units
CON	CONTINGENCY	0000	NONE	ZDEPT	No Department	Linear	15.360.77Dollars
Factors	15360.8	Dollars					
ESC	ESCALATION	0000	NONE	ZDEPT	No Department	Linear	31.719.16Dollars
Factors	31719.2	Dollars					

WBS No: 1HAG30 Title: IWCP/ISM

Activity ID: 1HAG300010 Description: IWCP/ISM Program FY01

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LG300010	IWCP/ISM Support	1.00	each	EE	1.850	1.850	78.829	153.355	0	232.183	34.612	266.795
SYS	Contingency And Escalation	1.00	lea	EE	0	0	0	0	20.884	20.884	0	20.884
Total for Activity 1HAG300010:						1.850	78.829	153.355	20.884	253.067	34.612	287.679



WBS No: 1HAG30  
Activity ID: 1HAG300010

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

**Line Item LG300010 - IWCP/ISM Support**

BOE	Estimators Experience - this estimate is based upon past experience of required support in FY99 and FY00. Experience Item Desc - IWCP/ISM Program Administration Breakdown of Cost Data: Item - Program Manager Units - 1 KH FTE Unit Cost - 1850 hours in FY01  Item - Program SME Units - 1,850 hours in FY01 Unit Cost - \$72.66 per hour for LATA support per FY00 rates  Item - Program Support Units - 1 FTE @ 1,850 hours Unit Cost - \$78 per hours for SMI support  This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.										
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Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	750	STRAIGHT TIME BASE	M030	MANAGEMENT INTEGRATORS (GR	K252S	Engineering	Linear	1,850.00	Hours
	Factors	1850	hours						
	A57	LATA	E120	SAFETY ENGINEERS	K252S	Engineering	Linear	134,421.00	Dollars
	Factors	1850	hours	72.66	dollars per hour				
	A5H	SUBCONTRACTED SRVS	E120	SAFETY ENGINEERS	K252S	Engineering	Linear	18,933.74	Dollars
	Factors	300	hours	78	dollars per hour - SMI				

0.80913 [SYS 061400] .80704 - System

**Line Item SYS - Contingency And Escalation**

BOE										
Resources	Cost Element			Skill		Department		Curve	Quantity	Units
	CON	CONTINGENCY		0000	NONE	ZDEPT	No Department	Linear	13,229.89	Dollars
	Factors 13229.9 Dollars									
	ESC	ESCALATION		0000	NONE	ZDEPT	No Department	Linear	7,653.90	Dollars
	Factors 7653.90 Dollars									

Activity ID: 1HAG3000P2 Description: IWCP/ISM Program Administration FY00

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF300101	IWCP/ISM Administration	1.00	each	EE	729	729	31,063	111,081	0	142,144	15,159	157,302
Total for Activity 1HAG3000P2:						729	31,063	111,081	0	142,144	15,159	157,302

**Line Item LF300101 - IWCP/ISM Administration**

BOE	Estimators Experience - this estimate is based upon past experience of required support in FY99 and FY00. Experience Item Desc - IWCP/ISM Program Administration Breakdown of Cost Data: Item - Program Manager Units - 1 KH FTE Unit Cost - 729 hours in FY00  Item - Program Support Units - 2 FTE 729 hours in FY00 = 1,458 Unit Cost - \$78 per hours for SMI support; and \$72.66 per hour for LATA support = average \$74.44  Item - Travel expenses to ISM workshope Units - 1 workshop each year (2 years) Unit Cost - \$1,000 in travel costs and \$250 in fees										
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Resources	Cost Element			Skill		Department		Curve	Quantity	Units	
	750	STRAIGHT TIME BASE		M030	MANAGEMENT INTEGRATORS (GR		K252S	Engineering	Linear	729.00	Hours
	Factors		729	hours							



WBS No: 1HAG30  
Activity ID: 1HAG3000P2

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

A57	LATA	E120	SAFETY ENGINEERS	K252S	Engineering	Linear	52,969.14	Dollars
Factors	729 hours		72.66 dollars per hour					
A5H	SUBCONTRACTED SRVS	E120	SAFETY ENGINEERS	K252S	Engineering	Max Frontload	56,862.00	Dollars
Factors	729 hours		78 Dollars Per Hours (SMI)					
A5M	TRAVEL/TRAIN/RELOCAT	0000	NONE	K252S	Engineering	Trianglr Decr	1,250.00	Dollars
Factors	1250 travel expenses for ISM Workshop							

WBS No: 1HAG40 Title: Fire Protection  
Activity ID: 1HAG400011 Description: Fire Protection Engineering FY01  
Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF400111	FPE Oversight	1.00	each	EE	0	0	0	148,822	0	148,822	0	148,822
LF400112	SME Project Support	1.00	each	EE	0	0	0	148,822	0	148,822	0	148,822
LF400113	FPE Flammable Gas Program	1.00	each	EE	0	0	0	85,144	0	85,144	0	85,144
LF400114	FPE Administration	1.00	each	EE	0	0	0	185,421	0	185,421	0	185,421
SYS	Contingency And Escalation	1.00	ea	EE	0	0	0	0	30,058	30,058	0	30,058
Total for Activity 1HAG400011:						0	0	568,208	30,058	598,266	0	598,266

**Line Item LF400111 - FPE Oversight**

**BOE**  
Estimators Experience - This basis of the estiamte is from FY99 and 00 experience gained in FPE support services.  
Experience Item Desc - Maintenance of sitewide fire protection program plan. Maintenance site Fire Protection Manual (old HSP). Responsible site safety sanagement srogram owner for Fire Protection. Miscellaneous tasks for project involvement such as compliance studies for DOE required Codes and standards, fire hazards and engineering studies (such as fire modeling, hazard assessment, life safety analysis), and coordination with Fire Department divisions.  
Breakdown of Cost Data:  
Item - FPE Oversight  
Units - 1 FTE  
Unit Cost - 99.42 per hour per current Hughes contracted rates.  
  
This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.

Resources	Cost Element			Skill		Department		Curve	Quantity	Units
	A5H	SUBCONTRACTED SRVS		E120	SAFETY ENGINEERS	K252S	Engineering	Linear	148,821.60	Dollars
	Factors	1850 hours		99.42 dollars per hour for Professional						

0.80913 [SYS 061400] .80704 - System

**Line Item LF400112 - SME Project Support**

**BOE**  
Estimators Experience - This estimate is based upon a best guess of the Fire Protection Lead. The basis of the estiamte is from FY99 and 00 experience gained in FPE support services.  
Experience Item Desc - Multiple tasks for project involvement such as fire protection system impairments, assisting building management with necessary corrective actions, assisting with FPE tests and maintenance, and assistance with Authroization Basis development and implementation.  
Breakdown of Cost Data:  
Item - FPE Oversight  
Units - 1 FTE  
Unit Cost - 99.42 per hour per current Hughes contracted rates.  
  
This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.

Resources	Cost Element			Skill		Department		Curve	Quantity	Units
	A5H	SUBCONTRACTED SRVS		E120	SAFETY ENGINEERS	K252S	Engineering	Linear	148,821.60	Dollars
	Factors	1850	hours	99.42	dollars per hour for Professional					

0.80913 [SYS 061400] .80704 - System

**Line Item LF400113 - FPE Flammable Gas Program**

**BOE**  
Estimators Experience - This estimate is based upn the experience of the current FPE Lead.  
Experience Item Desc - This line item manages the issue of flammable gas generation at RFETS. Identification and documentatio of all issues associated with flammable gas generation is required. Documentation and correction actions must be implemented.  
Breakdown of Cost Data:  
Item - FPE Support  
Units - 1 FTE  
Unit Cost - 56.88 per hour per current Hughes contracted rates.  
  
This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.

WBS No: 1HAG40  
Activity ID: 1HAG400011

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	A5H	SUBCONTRACTED SRVS	E120	SAFETY ENGINEERS	K252S	Engineering	Linear	85.143.58	Dollars
Factors 1850 hours 56.88 dollars per hour for Professional									

0.80913 [SYS 061400] .80704 - System

**Line Item LF400114 - FPE Administration**

BOE	Estimators Experience - This estimate is based upon the current planned resources and approved organizational charts for FY00 Experience Item Desc - This line item includes a program manager and secretary Breakdown of Cost Data: Item - Subcontracted Support from Hughes & Associates Units - 2 FTEs Unit Cost - 1850 hours to year-end (secretary \$24.45 per hour; manager \$99.42 per hour)  This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.								
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Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	A5H	SUBCONTRACTED SRVS	G010	ADMINISTRATIVE ASSISTANTS	K252S	Engineering	Linear	36.599.16	Dollars
Factors 1850 hours 24.45 dollars per hour for Technician Level 1									

0.80913 [SYS 061400] .80704 - System

A5H	SUBCONTRACTED SRVS		M030	MANAGEMENT INTEGRATORS (GR		K252S	Engineering	Linear	148,821.60	Dollars
Factors	1850	hours		99.42	dollars per hour for Professional					

0.80913 [SYS 061400] .80704 - System

**Line Item SYS - Contingency And Escalation**

BOE									
Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	CON	CONTINGENCY	0000	NONE	ZDEPT	No Department	Linear	18.110.2	Dollars
Factors 18110.2 Dollars									
	ESC	ESCALATION	0000	NONE	ZDEPT	No Department	Linear	11.948.14	Dollars
	Factors 11948.1 Dollars								

Activity ID: 1HAG400012 Description: Fire Protection Engineering FY02

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF400121	FPE Oversight	1.00	each	EE	0	0	0	148.822	0	148.822	0	148.822
LF400122	SME Project Support	1.00	each	EE	0	0	0	148.822	0	148.822	0	148.822
LF400124	FPE Administration	1.00	each	EE	0	0	0	185.451	0	185.451	0	185.451
SYS	Contingency And Escalation	1.00	ea	EE	0	0	0	0	72.019	72.019	0	72.019
Total for Activity 1HAG400012:						0	0	483.094	72.019	555.113	0	555.113

**Line Item LF400121 - FPE Oversight**

BOE	Estimators Experience - This basis of the estiamte is from FY99 and 00 experience gained in FPE support services. Experience Item Desc - Maintenance of Program Plan and Fire Protection Manual. Responsible site-safety, management program owner for Fire Protection. Miscellaneous tasks for project involvement such as compliance studies for DOE required Codes and standards, fire hazards and engineering studies (such as fire modeling, hazard assessment, life safety analysis), and coordination with Fire Department divisions. Breakdown of Cost Data: Item - FPE Oversight Units - 1 FTE Unit Cost - 99.42 per hour per current Hughes contracted rates.  This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.								
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Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	A5H	SUBCONTRACTED SRVS	E120	SAFETY ENGINEERS	K252S	Engineering	Linear	148.821.60	Dollars
Factors 1850 hours 99.42 dollars per hour for Professional									

0.80913 [SYS 061400] .80704 - System

**Line Item LF400122 - SME Project Support**

BOE	Estimators Experience - This estimate is based upon a best guess of the Fire Protection Lead. The basis of the estiamte is from FY99 and 00 experience gained in FPE support services. Experience Item Desc - Multiple tasks for project involvement such as fire protection system impairments, assisting building management with necessary								
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WBS No: 1HAG40  
Activity ID: 1HAG400012

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

corrective actions, assisting with FPE tests and maintenance, and assistance with Authroization Basis development and implementation.  
Breakdown of Cost Data:  
Item - FPE Oversight  
Units - 1 FTE  
Unit Cost - 99.42 per hour per current Hughes contracted rates.

This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.

Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	A5H	SUBCONTRACTED SRVS	E120	SAFETY ENGINEERS	K252S	Engineering	Linear	148,821.60	Dollars
	Factors 1850 hours		99.42 dollars per hour for Professional						

0.80913 [SYS 061400] .80704 - System

**Line Item LF400124 - FPE Administration**

BOE  
Estimators Experience - This estimate is based upon the current planned resources and approved organizational charts for FY00  
Experience Item Desc - This line item includes a program manager and secretary  
Breakdown of Cost Data:  
Item - Subcontracted Support from Hughes & Associates  
Units - 2 FTEs  
Unit Cost - 1850 hours to year-end (secretary \$24.45 per hour; manager \$99.42 per hour)

This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.

Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	A5H	SUBCONTRACTED SRVS	G010	ADMINISTRATIVE ASSISTANTS	K252S	Engineering	Linear	36.629.10	Dollars
	Factors	1850	hours	24.47	per hour for Technician Level 1				

0.80913 [SYS 061400] .80704 - System

A5H	SUBCONTRACTED SRVS	M030	MANAGEMENT INTEGRATORS (GR	K252S	Engineering	Linear	148,821.60	Dollars
Factors	1850	hours	99.42	dollars per hour for Professional				

0.80913 [SYS 061400] .80704 - System

**Line Item SYS - Contingency And Escalation**

BOE

Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	CON	CONTINGENCY	0000	NONE	ZDEPT	No Department	Linear	49.443.16	Dollars
	Factors 49443.2 Dollars								
	ESC	ESCALATION	0000	NONE	ZDEPT	No Department	Linear	22.575.68	Dollars
	Factors 22575.7 Dollars								

Activity ID: 1HAG400013 Description: Fire Protection Engineering FY04

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF400131	FPE Support	1.00	each	EE	0	0	0	446,465	0	446,465	0	446,465
SYS	Contingency And Escalation	1.00	ea	EE	0	0	0	0	63,628	63,628	0	63,628
Total for Activity 1HAG400013:						0	0	446,465	63,628	510,093	0	510,093

**Line Item LF400131 - FPE Support**

BOE

Estimators Experience - This basis of the estiamte is from FY99 and 00 experience gained in FPE support services.  
Experience Item Desc - Maintenance of Program Plan and Fire Protection Manual. Responsible site-safety, management program owner for Fire Protection.  
Miscellaneous tasks for project involvement such as compliance studies for DOE required Codes and standards, fire hazards and engineering studies (such as fire modeling, hazard assessment, life safety analysis), and coordination with Fire Department divisions.  
Breakdown of Cost Data:  
Item - FPE Oversight  
Units - 2 FTE (1850 hours)  
Unit Cost - 99.42 per hour per current Hughes contracted rates.  
  
Item - FP Program Lead  
Units - 1 FTE (1850 hours)  
Unit Cost - 99.42 per hour (Hughes & Associates)

This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.

WBS No: 1HAG40  
Activity ID: 1HAG400013

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

Resources	Cost Element			Skill		Department		Curve	Quantity	Units	
	A5H	SUBCONTRACTED SRVS		E120	SAFETY ENGINEERS		K252S	Engineering	Linear	297.643.30	Dollars
	Factors	1850	hours	99.42	per hour		2	FTEs		0.80913 [SYS 061400] .80704 - Svstem	
	A5H	SUBCONTRACTED SRVS		M030	MANAGEMENT INTEGRATORS (GR		K252S	Engineering	Linear	148.821.60	Dollars
	Factors	1850	hours	99.42	per hour		0.80913 [SYS 061400] .80704 - Svstem				

**Line Item SYS - Contingency And Escalation**

**BOE**

Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	CON	CONTINGENCY	0000	NONE	ZDEPT	No Department	Linear	20.759.81	Dollars
	Factors 20759.8 Dollars								
	ESC	ESCALATION	0000	NONE	ZDEPT	No Department	Linear	42.867.89	Dollars
	Factors 42867.9 Dollars								

Activity ID: 1HAG400014 Description: Fire Protection Engineering FY03

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF400131	FPE Support	1.00	each	EE	0	0	0	446.465	0	446.465	0	446.465
SYS	Contingency And Escalation	1.00	ea	EE	0	0	0	0	123.471	123.471	0	123.471
Total for Activity 1HAG400014:						0	0	446.465	123.471	569.936	0	569.936

**Line Item LF400131 - FPE Support**

**BOE**

Estimators Experience - This basis of the estimate is from FY99 and 00 experience gained in FPE support services.  
Experience Item Desc - Maintenance of Program Plan and Fire Protection Manual. Responsible site-safety, management program owner for Fire Protection. Miscellaneous tasks for project involvement such as compliance studies for DOE required Codes and standards, fire hazards and engineering studies (such as fire modeling, hazard assessment, life safety analysis), and coordination with Fire Department divisions.  
Breakdown of Cost Data:  
Item - FPE Oversight  
Units - 2 FTE (1850 hours)  
Unit Cost - 99.42 per hour per current Hughes contracted rates.  
  
Item - FP Program Lead  
Units - 1 FTE (1850 hours)  
Unit Cost - 99.42 per hour (Hughes & Associates)  
  
This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.

Resources	Cost Element			Skill		Department		Curve	Quantity	Units	
	A5H	SUBCONTRACTED SRVS		E120	SAFETY ENGINEERS		K252S	Engineering	Linear	297.643.30	Dollars
	Factors	1850	hours	99.42	per hour		2	FTEs			
	0.80913 [SYS 061400] .80704 - System										
	A5H	SUBCONTRACTED SRVS		M030	MANAGEMENT INTEGRATORS (GR		K252S	Engineering	Linear	148.821.60	Dollars
Factors	1850	hours	99.42	per hour		0.80913 [SYS 061400] .80704 - System					

**Line Item SYS - Contingency And Escalation**

**BOE**

Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	CON	CONTINGENCY	0000	NONE	ZDEPT	No Department	Linear	89.233.92	Dollars
	Factors 89233.9 Dollars								
	ESC	ESCALATION	0000	NONE	ZDEPT	No Department	Linear	34.237.28	Dollars
	Factors 34237.3 Dollars								

Activity ID: 1HAG400020 Description: Conduct Fire Pump & Loop Flow Tests

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF400201	Conduct Tests	1.00	each	HC	0	0	0	14.925	0	14.925	0	14.925

WBS No: 1HAG40  
Activity ID: 1HAG400020

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \* Starts In FY \*

Total for Activity 1HAG400020: 0 0 14.925 0 14.925 0 14.925

**Line Item LF400201 - Conduct Tests**

**BOE**  
Estimators Experience - The basis of this estimate is from FY98 - FY00 fire pump and loop testing.  
Experience Item Desc - Revision or creation of procedures to test site-wide water system for fire protection and site fire pumps. Testing of site-wide water system and site fire pumps on site-wide system. Testing of water system and fire pump at Bldg 280 complex.  
Breakdown of Cost Data:  
Item - Loop Testing (Testing; and Review/Revise/Update procedures)  
Unit Cost - 35 hours x 2 FTE x \$99.5 per hour (per FY00 Hughes rates for Professional Level 9) = \$6,965  
  
Item - Fire Pump Test in B928  
Unit Costs - 40 hours x 2 FTE x \$99.5 per hour (per FY00 Hughes rates for Professional Level 9) = \$7,960

Resources		Cost Element	Skill	Department		Curve	Quantity	Units
A5H	SUBCONTRACTED SRVS	E120	SAFETY ENGINEERS	K252S	Engineering	Linear	14.925.00	Dollars

Factors 14925 dollars for entire test

Activity ID: 1HAG400021 Description: Conduct Fire Pump & Loop Flow Tests FY01

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF400211	Conduct Loop & Low Test	1.00	each	HC	0	0	0	12.076	0	12.076	0	12.076
SYS	Contingency And Escalation	1.00	ea	EE	0	0	0	0	639	639	0	639
Total for Activity 1HAG400021:						0	0	12.076	639	12.715	0	12.715

**Line Item LF400211 - Conduct Loop & Low Test**

**BOE**  
Estimators Experience - The basis of this estimate is from FY98 - FY00 fire pump and loop testing.  
Experience Item Desc - Revision or creation of procedures to test site-wide water system for fire protection and site fire pumps. Testing of site-wide water system and site fire pumps on site-wide system. Testing of water system and fire pump at Bldg 280 complex.  
Breakdown of Cost Data:  
Item - Loop Testing (Testing; and Review/Revise/Update procedures)  
Unit Cost - 35 hours x 2 FTE x \$99.5 per hour (per FY00 Hughes rates for Professional Level 9) = \$6,965  
  
Item - Fire Pump Test in B928  
Unit Costs - 40 hours x 2 FTE x \$99.5 per hour (per FY00 Hughes rates for Professional Level 9) = \$7,960  
  
This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.

Resources		Cost Element	Skill	Department		Curve	Quantity	Units
A5H	SUBCONTRACTED SRVS	E120	SAFETY ENGINEERS	K252S	Engineering	Linear	12.076.33	Dollars

Factors 14925 cost for entire test

0.80913 [SYS 061400] .80704 - System

**Line Item SYS - Contingency And Escalation**

Resources		Cost Element	Skill	Department		Curve	Quantity	Units
CON	CONTINGENCY	0000	NONE	ZDEPT	No Department	Linear	384.90	Dollars

Factors 384.902 Dollars

ESC	ESCALATION	0000	NONE	ZDEPT	No Department	Linear	253.94	Dollars
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Factors 253.938 Dollars

Activity ID: 1HAG400022 Description: Conduct Fire Pump & Loop Flow Tests FY02

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF400221	Conduct Tests	1.00	each	EE	0	0	0	12.076	0	12.076	0	12.076
SYS	Contingency And Escalation	1.00	ea	EE	0	0	0	0	1.800	1.800	0	1.800
Total for Activity 1HAG400022:						0	0	12.076	1.800	13.877	0	13.877

**Line Item LF400221 - Conduct Tests**

**BOE**  
Estimators Experience - The basis of this estimate is from FY98 - FY00 fire pump and loop testing.  
Experience Item Desc - Revision or creation of procedures to test site-wide water system for fire protection and site fire pumps. Testing of site-wide water system and site fire pumps on site-wide system. Testing of water system and fire pump at Bldg 280 complex.  
Breakdown of Cost Data:  
Item - Loop Testing (Testing; and Review/Revise/Update procedures)

WBS No: 1HAG40  
Activity ID: 1HAG400022

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

Unit Cost - 35 hours x 2 FTE x \$99.5 per hour (per FY00 Hughes rates for Professional Level 9) = \$6,965

Item - Fire Pump Test in B928

Unit Costs - 40 hours x 2 FTE x \$99.5 per hour (per FY00 Hughes rates for Professional Level 9) = \$7,960

This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.

Resources		Cost Element	Skill		Department		Curve	Quantity	Units
A5H	SUBCONTRACTED SRVS		E120	SAFETY ENGINEERS	K252S	Engineering	Linear	12.076.33	Dollars

Factors 14925 cost for entire tests

0.80913 [SYS 061400] .80704 - Svsstem

**Line Item SYS - Contingency And Escalation**

BOE

Resources		Cost Element	Skill		Department		Curve	Quantity	Units
CON	CONTINGENCY		0000	NONE	ZDEPT	No Department	Linear	1.235.97	Dollars

Factors 1235.97 Dollars

ESC	ESCALATION		0000	NONE	ZDEPT	No Department	Linear	564.34	Dollars
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Factors 564.344 Dollars

Activity ID: 1HAG400023 Description: Conduct Fire Pump & Loop Flow Tests FY03

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF400231	Conduct Tests	1.00	each	EE	0	0	0	12.076	0	12.076	0	12.076
SYS	Contingency And Escalation	1.00	lea	EE	0	0	0	0	3.340	3.340	0	3.340
Total for Activity 1HAG400023:						0	0	12.076	3.340	15.416	0	15.416

**Line Item LF400231 - Conduct Tests**

BOE

Estimators Experience - The basis of this estimate is from FY98 - FY00 fire pump and loop testing.  
Experience Item Desc - Revision or creation of procedures to test site-wide water system for fire protection and site fire pumps. Testing of site-wide water system and site fire pumps on site-wide system. Testing of water system and fire pump at Bldg 280 complex.

Breakdown of Cost Data:

Item - Loop Testing (Testing; and Review/Revise/Update procedures)

Unit Cost - 35 hours x 2 FTE x \$99.5 per hour (per FY00 Hughes rates for Professional Level 9) = \$6,965

Item - Fire Pump Test in B928

Unit Costs - 40 hours x 2 FTE x \$99.5 per hour (per FY00 Hughes rates for Professional Level 9) = \$7,960

This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.

Resources		Cost Element	Skill		Department		Curve	Quantity	Units
A5H	SUBCONTRACTED SRVS		E120	SAFETY ENGINEERS	K252S	Engineering	Linear	12.076.33	Dollars

Factors 14925 cost for entire test

0.80913 [SYS 061400] .80704 - Svsstem

**Line Item SYS - Contingency And Escalation**

BOE

Resources		Cost Element	Skill		Department		Curve	Quantity	Units
CON	CONTINGENCY		0000	NONE	ZDEPT	No Department	Linear	2.413.67	Dollars

Factors 2413.67 Dollars

ESC	ESCALATION		0000	NONE	ZDEPT	No Department	Linear	926.08	Dollars
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Factors 926.076 Dollars

Activity ID: 1HAG400024 Description: Conduct Fire Pump & Loop Flow Tests FY04

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LF400241	Conduct Tests	1.00	each	EE	0	0	0	12.076	0	12.076	0	12.076
SYS	Contingency And Escalation	1.00	lea	EE	0	0	0	0	1.721	1.721	0	1.721
Total for Activity 1HAG400024:						0	0	12.076	1.721	13.797	0	13.797

WBS No: 1HAG40  
Activity ID: 1HAG400024

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \*

Starts In FY \*

**Line Item LF400241 - Conduct Tests**

BOE	Estimators Experience - The basis of this estimate is from FY98 - FY00 fire pump and loop testing. Experience Item Desc - Revision or creation of procedures to test site-wide water system for fire protection and site fire pumps. Testing of site-wide water system and site fire pumps on site-wide system. Testing of water system and fire pump at Bldg 280 complex. Breakdown of Cost Data: Item - Loop Testing (Testing; and Review/Revise/Update procedures) Unit Cost - 35 hours x 2 FTE x \$99.5 per hour (per FY00 Hughes rates for Professional Level 9) = \$6,965  Item - Fire Pump Test in B928 Unit Costs - 40 hours x 2 FTE x \$99.5 per hour (per FY00 Hughes rates for Professional Level 9) = \$7,960  This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.											
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Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	A5H	SUBCONTRACTED SRVS	E120	SAFETY ENGINEERS	K252S	Engineering	Linear	12.076.33	Dollars
	Factors 14925 cost for entire test								

0.80913 [SYS 061400] .80704 - Svstem

**Line Item SYS - Contingency And Escalation**

BOE										
Resources	Cost Element			Skill		Department		Curve	Quantity	Units
	CON	CONTINGENCY		0000	NONE	ZDEPT	No Department	Linear	561.53	Dollars
	Factors		561.527		Dollars					
	ESC	ESCALATION		0000	NONE	ZDEPT	No Department	Linear	1.159.52	Dollars
	Factors		1159.52		Dollars					

Activity ID: 1HAG400040 Description: Fire Protection Engineering FY05

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LG40042	Conduct Fire Pump & Loop Tests	1.00	each	EE	0	0	0	12,076	0	12,076	0	12,076
SYS	Contingency And Escalation	1.00	lea	EE	0	0	0	0	6,444	6,444	0	6,444
Total for Activity 1HAG400040:						0	0	12,076	6,444	18,520	0	18,520

**Line Item LG40042 - Conduct Fire Pump & Loop Tests**

BOE	Estimators Experience - The basis of this estimate is from FY98 - FY00 fire pump and loop testing. Experience Item Desc - Revision or creation of procedures to test site-wide water system for fire protection and site fire pumps. Testing of site-wide water system and site fire pumps on site-wide system. Testing of water system and fire pump at Bldg 280 complex. Breakdown of Cost Data: Item - Loop Testing (Testing; and Review/Revise/Update procedures) Unit Cost - 35 hours x 2 FTE x \$99.5 per hour (per FY00 Hughes rates for Professional Level 9) = \$6,965  Item - Fire Pump Test in B928 Unit Costs - 40 hours x 2 FTE x \$99.5 per hour (per FY00 Hughes rates for Professional Level 9) = \$7,960  This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.											
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Resources	Cost Element			Skill		Department		Curve	Quantity	Units
	A5H	SUBCONTRACTED SRVS		0000	NONE	K252S	Engineering	Linear	12.076.33	Dollars
	Factors		14925		for entire test					

0.80913 [SYS 061400] .80704 - Svstem

**Line Item SYS - Contingency And Escalation**

BOE										
Resources	Cost Element			Skill		Department		Curve	Quantity	Units
	CON	CONTINGENCY	0000	NONE	ZDEPT	No Department	Linear	4.572.98	Dollars	
	Factors		4572.99 Dollars							
	ESC	ESCALATION	0000	NONE	ZDEPT	No Department	Linear	1.870.81	Dollars	
	Factors		1870.81 Dollars							

Activity ID: 1HAG4000P2 Description: Fire Protection Engineering FY00

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE	Labor	Labor Hours	Labor Cost	Materials/ Sub	Contingency	Total Prime	Burden Cost	Total Cost
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WBS No: 1HAG40  
Activity ID: 1HAG4000P2

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project WBS Filter \* Baseline Devl  
1HAG

				Type	Hours/Unit	Total	Total	Activity Filter Cost	& Escalation	Cost	Starts In FY	
LF400101	FPE Oversight Support	1.00	each	EE	0	0	0	92.065	0	92.065	0	92.065
LF400103	Site Program Support	1.00	each	EE	0	0	0	72.477	0	72.477	0	72.477
LF400104	Flammable Gas Program	1.00	each	EE	0	0	0	59.045	0	59.045	0	59.045
LF400105	Fire Protection Administration	1.00	each	EE	0	0	0	90.301	0	90.301	0	90.301
Total for Activity 1HAG4000P2:						0	0	313.889	0	313.889	0	313.889

**Line Item LF400101 - FPE Oversight Support**

BOE	Estimators Experience - This estimate is based upon a best guess of the Fire Protection Lead. The basis of the estiamte is from FY99 and 00 experience gained in FPE support services. Experience Item Desc - Development and revision of sitewide fire protection program plan. Development nad revision of site Health and Safety Practices Manual provisions for fire potential. Miscellaneous tasks for project involvement such as compliance studies for DOE required Codes and standards, fire hazards and engineering studies (such as fire modeling, hazard assessment, life safety analysis), and coordination with Fire Department divisions. Breakdown of Cost Data: Item - FPE Oversight Units - 1 FTE Unit Cost - 99.42 per hour per current Hughes contracted rates.  Item - Technical Writer/Edito Units - 1/2 FTE Unit Cost - 53.74 per hour per current LATA contracted rates.											
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Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	A57	LATA	P160	TECHNICAL WRITERS AND EDITOR	K252S	Engineering	Linear	19.588.23	Dollars
	Factors	729	hours	0.5	half-time support	53.74	dollars per hour (LATA)		
	A5H	SUBCONTRACTED SRVS	E120	SAFETY ENGINEERS	K252S	Engineering	Linear	72.477.18	Dollars
	Factors	729	hours	99.42	per hour (Hughes)				

**Line Item LF400103 - Site Program Support**

BOE	Estimators Experience - This estimate is based upon a best guess of the Fire Protection Lead. The basis of the estiamte is from FY99 and 00 experience gained in FPE support services. Experience Item Desc - Multiple tasks for project involvement such as fire protection system impairments, assisting building management with necessary corrective actions, assisting with FPE tests and maintenance, and assistance with Authroization Basis development and implementation. Breakdown of Cost Data: Item - FPE Oversight Units - 1 FTE Unit Cost - 99.42 per hour per current Hughes contracted rates.											
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Resources	Cost Element			Skill		Department		Curve	Quantity	Units
	A5H	SUBCONTRACTED SRVS		E120	SAFETY ENGINEERS	K252S	Engineering	Linear	72,477.18	Dollars
	Factors	729	hours	99.42	per hour (Hughes)					

**Line Item LF400104 - Flammable Gas Program**

BOE	Estimators Experience - This estimate is based upn the experience of the current FPE Lead. Experience Item Desc - This line item manages the issue of flammable gas generation at RFETS. Identification and documentatio of all issues associated with flammable gas generation is required. Documentation and correction actions must be implemented. Breakdown of Cost Data: Item - FPE Support Units - 1 FTE Unit Cost - 56.88 per hour per current Hughes contracted rates.  Item - Issue Coordination, Program Oversight Units - .25 FTE Unit Cost - 96.46 per hour per current E2 contracted rates.											
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Resources	Cost Element		Skill		Department		Curve	Quantity	Units
	A53	E-2	E040	ELECTRICAL ENGINEERS	K252S	Engineering	Linear	17,579.83	Dollars
	Factors	729 hours		96.46 dollars per hour (E2)		0.25 half-time support			
	A5H	SUBCONTRACTED SRVS	E120	SAFETY ENGINEERS	K252S	Engineering	Linear	41,465.52	Dollars
	Factors	729 hours		56.88 per hour (Hughes)					

**Line Item LF400105 - Fire Protection Administration**

BOE	Estimators Experience - This estimate is based upon the current planned resources and approved organizational charts for FY00 Experience Item Desc - This line item includes a program manager and secretary											
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WBS No: 1HAG40  
Activity ID: 1HAG4000P2

**Rockv Flats Closure Project**  
**Baseline Cost and Basis of Estimate**

Project Baseline Devl  
WBS Filter 1HAG  
Activity Filter \* Starts In FY \*

Breakdown of Cost Data:  
Item - Subcontracted Support from Hughes & Associates  
Units - 2 FTEs  
Unit Cost - 1360 hours to year-end (secretary \$24.45 per hour; manager \$99.42 per hour)

Resources		Cost Element	Skill	Department	Curve	Quantity	Units
A5H	SUBCONTRACTED SRVS	G010	ADMINISTRATIVE ASSISTANTS	K252S	Engineering	Linear	17.824.05Dollars
Factors	729	hours	24.45	per hour (Hughes)			
A5H	SUBCONTRACTED SRVS	M030	MANAGEMENT INTEGRATORS (GR	K252S	Engineering	Linear	72.477.18Dollars
Factors	729	hours	99.42	per hour (Hughes)			

Activity ID: 1HXXG4004 Description: End of Fire Protection Engineering

Cost Risk 1 Schedule Risk 1

Line Item	Description	Quantity	Units	BOE Type	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
LG40042	Conduct Fire Pump & Loop Tests	0.96	each	EE	0	0	0	11.653	0	11.653	0	11.653
SYS	Contingency And Escalation	1.00	lea	EE	0	0	0	0	9.865	9.865	0	9.865
Total for Activity 1HXXG4004:						0	0	11.653	9.865	21.517	0	21.517

**Line Item LG40042 - Conduct Fire Pump & Loop Tests**

BOE	Estimators Experience - The basis of this estimate is from FY98 - FY00 fire pump and loop testing. Experience Item Desc - Revision or creation of procedures to test site-wide water system for fire protection and site fire pumps. Testing of site-wide water system and site fire pumps on site-wide system. Testing of water system and fire pump at Bldg 280 complex. Breakdown of Cost Data: Item - Loop Testing (Testing; and Review/Revise/Update procedures) Unit Cost - 35 hours x 2 FTE x \$99.5 per hour (per FY00 Hughes rates for Professional Level 9) = \$6,965  Item - Fire Pump Test in B928 Unit Costs - 40 hours x 2 FTE x \$99.5 per hour (per FY00 Hughes rates for Professional Level 9) = \$7,960  This estimate includes a project productivity/efficiency factor for committed but as yet undefined cost reductions.
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Resources		Cost Element	Skill	Department	Curve	Quantity	Units
A5H	SUBCONTRACTED SRVS	0000	NONE	K252S	Engineering	Linear	12.076.33Dollars
Factors	14925	for entire test					

0.80913 [SYS 061400] .80704 - System

**Line Item SYS - Contingency And Escalation**

BOE										
Resources	Cost Element			Skill		Department		Curve	Quantity	Units
	CON	CONTINGENCY		0000	NONE	ZDEPT	No Department	Linear	7.265.75	Dollars
	Factors		7265.75 Dollars							
	ESC	ESCALATION		0000	NONE	ZDEPT	No Department	Linear	2.599.11	Dollars
	Factors		2599.11 Dollars							

**Report Totals:**

Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Contingency & Escalation	Total Prime Cost	Burden Cost	Total Cost
62.250	2.082.415	6.685.908	1.260.570	10.028.892	840.469	10.869.362